

# Littleton Town Hall Building & Space Needs Assessment

## Volume IV: King Street, Existing Conditions Report

Indian Hill Music Center  
36 King Street  
Littleton, MA 01460

January 2021

**LLB**

ARCHITECTS



# Project Team

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indian hill *Making Music...*  
**music** *Creating Community*

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# Introduction

In the Fall of 2020 LLB Architects and their team of architectural, mechanical, electrical, plumbing and fire protection, civil engineering, and environmental materials consultants conducted an Existing Conditions Assessment of the subject property located 36 King Street and associated parking lot, known as the Indian Hill Music Center.

This study was developed to inform interested parties of the viability of using this building and the adjacent surface parking lots as a future home for a yet to be determined municipal program. This report is accompanied with numerical and photographic information to support the findings, as well as recommendations where necessary.

The following report is presented in parts beginning with a high level summary and progressing into further detail.

The first part of this report introduces the project, summarizes the findings, and describes the methodology used and assumptions made to aid future analysis and decision making.

The second part of this report assesses the existing building from a zoning, building code, and accessibility standpoint.

The third part includes assessment findings documented by the project team. This begins with a summary of the state of the building broken out by major systems for independent consideration. Following this summary is a detailed description of the exterior vertical enclosure, roof, and interior conditions of the complex. Here, this report provides a more focused understanding of current conditions. Included in each of these assessments is our team's professional opinion as to the predicted life expectancy of major components based on the current conditions observed.

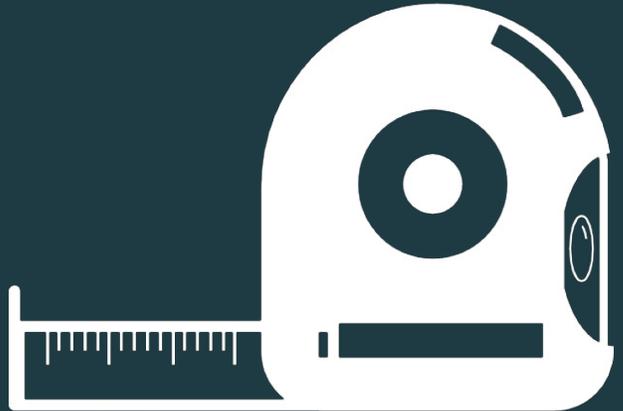
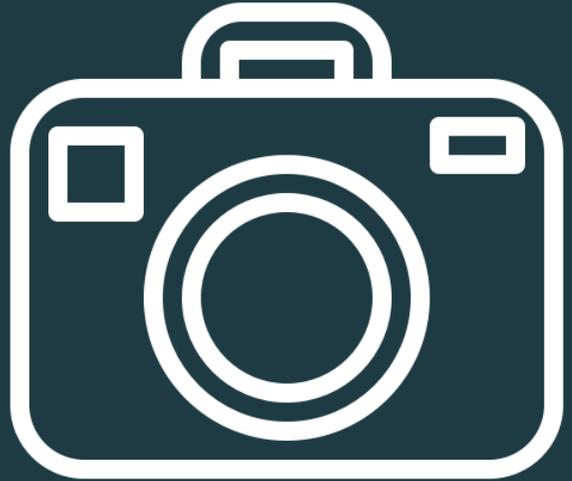
Following these, in a fourth part, are the supporting reports from the team's consulting engineers' assessments of the building and its associated parcel. In addition to the mechanical, electrical, plumbing, and fire protection reports completed by BER Engineers, a copy of the civil and hazardous materials report created by CDW Consulting are included.

Finally, copies of the building's documentation have been provided for reference as an exhibit at the end of this document

indian hill  
**music** Main Entrance



# I . Methodology



This assessment includes documentation of building and site components at 36 King Street, Littleton, Massachusetts. The complex consists of and existing structure that received a major renovation and music hall addition in the early 2000's. These structures now house the Indian Hill Music Center.

The resulting analysis is a distillation of broad-range and detailed observations made by a team of consultants from architectural, civil, mechanical, electrical, plumbing, and fire protection disciplines. In addition, a team of environmental specialists took samples of suspect material from numerous locations and had those samples tested for potential ACM.

The primary objective of the assessment was to identify and observe systems, assemblies, and/or components of the facility and adjacent parking lot and to provide an analysis of the existing conditions. In some cases, short-term recommendations are provided to address deficient items that may impact or influence the development or negotiations of this property. All observations and recommendations made by the team were the result of existing document review, interviews, and field surveys, and drone photography.

The majority of information was collected via the investigation (walkthrough) process in which each team member visually observed aspects of the facility pertinent to their specific trade and expertise. Deficiencies that were visible and readily accessible were collected, noted, and organized by LLB Architects in the form of this consolidated report.

Building components were photographed at interior and exterior locations, highlighting building envelope, roofing, structural systems (where readily accessible), representative interiors, and any unique or unusual spaces.

LLB Architects has developed a process to execute and process the collection and synthesis of assessment information efficiently. All collected information is organized by discipline, and then by building component (i.e. roofing, siding, etc.). This information is summarized in narrative description and supported by supplemental reports. (Refer to the Existing Conditions Survey, Part III, and Supporting Reports, Part IV, of this report).



## Observation Scope

### Site and Civil:

A general assessment of the existing site conditions for the project site was conducted by a licensed civil engineer. Record documents aided in the assessment including utility records from the Town of Littleton Public Work and Parks Department, ALTA/NSPS Land Title Survey Plans, Geographic Information System (GIS) data, and existing record plans provided by the client.

### Structural Frame and Building Envelope:

Visual identification of primary type of structure (steel/wood frame, etc.), sub-structure including foundation walls, slab-on-grade, basement enclosure, superstructure including floor and roof framing (where readily accessible), building envelope including facades, curtain wall systems, glazing systems, exterior sealants, balconies, porches and other architectural features of importance or noted as deficient. Observations of the building's exterior are generally viewed from the ground and not by special conveying, unless alternative vantage points from balconies or adjacent buildings were available.



**Roofing:** Identification of the material of the exposed membrane/material. Observations were made to note any deficiencies in drainage, damage to the membrane system, and signs of potential leaks occurring on the interior ceiling surfaces. Roofing was accessed directly wherever possible and viewed from adjacent vantage points where difficult to access.

**Interior Elements:** Visual inspection of typical occupied spaces including lobbies, corridors, office spaces, restrooms, and special or unusual areas. Observations and deficiencies are noted for typical floor, wall, and ceiling finishes and the general upkeep and use of space. Analyses of furnishings, fixtures, equipment, space suitability, and user comfort issues were not conducted as a part of this report. Assessments are intended to support a study of program, location, and space needs of each department. It is understood that a major renovation would occur to achieve this and most interior finishes would be removed.

**Plumbing:**

Identification of the sanitary, storm, and supply piping material, fixtures, domestic hot water, and other special fixtures. Deficiencies are noted for any distribution and fixtures which are damaged or beyond apparent useful life.

**Heating, Venting, and Cooling:**

Generation and distribution system, observed for components and assemblies past useful life or damaged. Any equipment that is shutdown or not operational is observed as an opinion of its condition or deficiency.

**Electrical:**

Identification and observation of the service provided, size, visual of the distribution system including panels, transformers, meters, emergency generation, and exit signs.

**Fire Protection:**

Identification and observation of fire protection systems including sprinklers, standpipes, fire alarms, panels, smoke detectors, and other envelope including facades, curtain wall systems,

glazing systems, exterior sealants, balconies, porches and other architectural features of importance or noted as deficient. Observations of the building's exterior are generally viewed from the ground and not by special conveying, unless alternative vantage points from balconies or adjacent buildings were available.

### **Life Safety:**

Visual identification related to building egress and their relationship to apparent conformance with original design intent. Application of fire protection systems including sprinklers, standpipes, fire alarms, panels, smoke detectors, and other equipment.

### **Exclusions**

The following items have been excluded from the scope of this study:

- Utility infrastructure including but not limited to filtration, transformers, telecommunications and subsurface storm/sewer, fiber optics.
- Structural analysis (loads, calculations, etc.)
- Infrared Scanning
- Energy Modelling

### **Additional Study and Monitoring**

Some observations suggested remedies that require further research, testing, exploratory work, design, engineering, or a combination thereof, all of which are outside the scope of this assessment.

In those cases, the observation was noted as an item to study or monitor.

Opinions of remedies and costs based on these assessments should only be construed as preliminary, order-of-magnitude budgets. Actual costs will most likely vary from the consultant's opinions on matters such as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, phasing of the work, project delivery method, and market conditions.

### **Field survey processes**

Walk-through surveys were conducted for the collection of facilities and features at the 37 Shattuck Street property and building complex`.



The purpose of each field survey was to visually observe the facility to gather life cycle and short-term deficiency information that were visible and readily accessible through non-destructive testing.

The facility was photographed from the interior, exterior, and above the roof highlighting components, representative conditions, and any unique or unusual areas of interest.

### **Document review and interview processes**

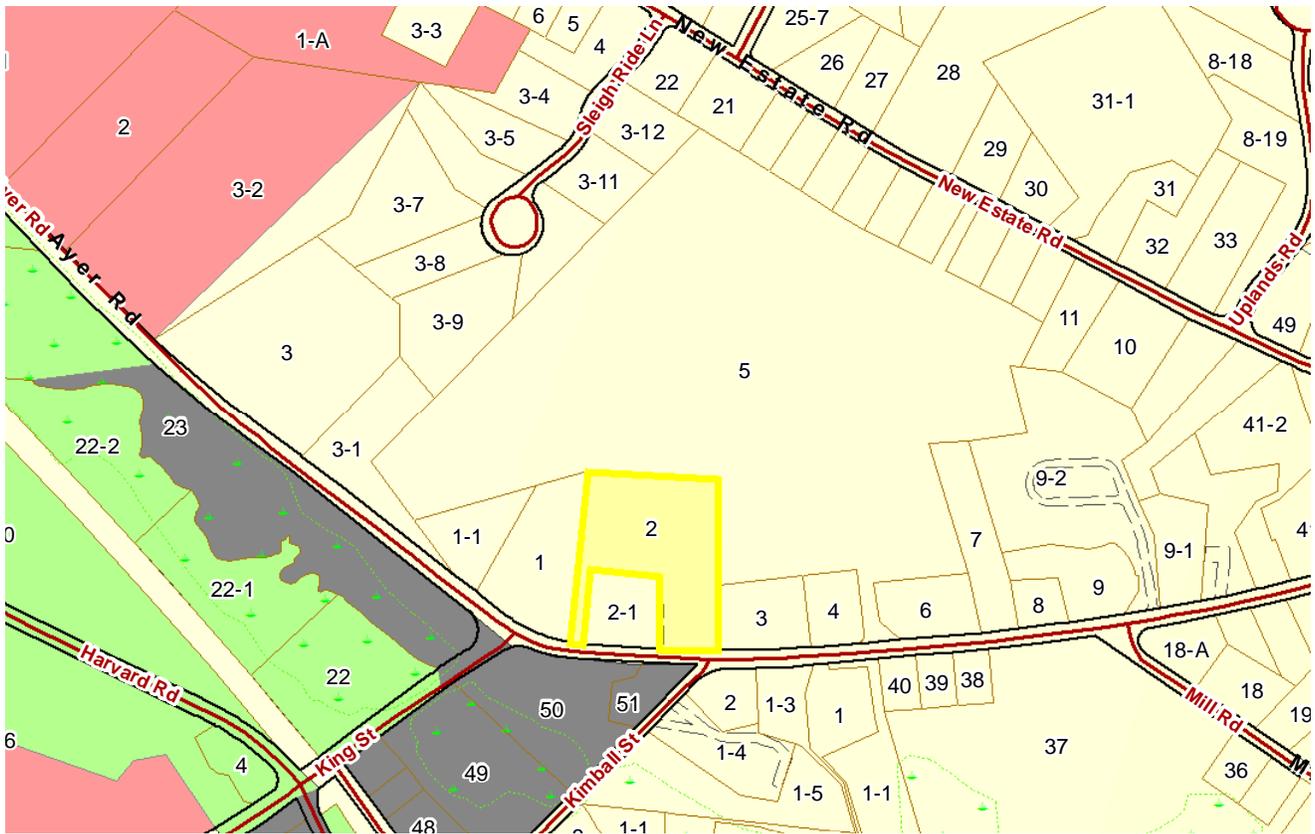
The purpose of including document review and interviews was to supplement the field survey and to assist the team's understanding of the facility and any pre-existing deficiencies or ongoing maintenance efforts.

A variety of existing documents, such as plans and reports, were obtained in the discovery stage of the project. Information of primary interest to the assessment included records indicating the age of building systems and components, studies, historical data, as-built conditions, and quantitative data.



View of Certificate of Occupancies.

## II . Existing Code Analysis



Town of Littleton, MA Zoning District map as amended. 36 King Street is within the "R" Residential zone.

← Town of Littleton, MA / Division 1: Town Meeting Enactments / Part II: General Legislation / Zoning Article V Use Regulations →

§ 173-26 Use regulations schedule.

Uses	Districts				
	R	VC	B	IA	IB
INSTITUTIONAL USES					
School					
Exempt by statute (MGL C. 40, § 3)	Y	Y	Y	Y	Y
Other	N	Y	Y	Y	Y
Church or other religious use	Y	Y	Y	Y	Y
Fraternal, charitable and nonprofit organization	A	Y	Y	Y	Y
Library, museum, hospital	Y	Y	Y	Y	Y
Conversion of municipal building <sup>6</sup>	P	P	P	P	P
Municipal use not elsewhere more specifically cited	Y	Y	Y	Y	Y
RECREATIONAL USES					

Town of Littleton, MA Zoning Ordinance, Use Regulation Schedule, as amended. Municipal Use Permitted in "R" Residential District.

# Zoning

## Overview of Town of Littleton Zoning by Laws

### Town Code, Chapter 173

36 King Street, Parcel: U42 2 0 is a 0.910 acre property owned by the INDIAN HILL ARTS, INC located within the Residential district (R). This district allows for Municipal uses. The entire lot is identified as part of the Aquifer and Water Resource. Wetlands are not identified in areas of the lot.

The property includes several adjacent Town buildings including; The Littleton High School and various accessory structures.

The portion of this property being considered in this study includes the eastern area accessed from King Street, the surrounding parking lot, and green-space. This area is abutted by residential properties also located in the R district.

Currently there appear to be 90 parking spaces serving the complex, 3 of which are universally accessible. The parking Regulations, (previous page), identify parking count requirements based on building use. Development of the chosen scheme will need to take this requirement into account in the context of the new library.

### Article VI, Intensity of Use Schedule Amended 05/08/2020:

- Minimum Lot Area: 40,000 (Compliant)
- Minimum Lot Frontage: 150' (Compliant)
- Minimum Street Setback: 30' (with exceptions)
- Principal Building Setback: 15'
- Accessory Building Setback 10'
- Maximum Building Height: 32'
- Maximum Lot Coverage by Building: N/A
- Maximum Lot Coverage by Buildings plus Paving: 60%
- The Aquifer and Water Resource Districts

### Article VIXIV, Aquifer and Water Resource District:

Anticipated applicable exceptions from this regulation are included below, see full language of Article and zones for all permitted and prohibited activities. Special Permit is required for the following activities:

- Parking area with more than 100 spaces capacity
- Use (other than single-family dwellings) if having estimated sewage flow or industrial wastewater flow exceeding 6 gallons per day combined flow per 1,000 square feet of lot area or exceeding 15,000 gallons per day combined flow regardless of lot area. Flows regulated by Title 5 shall be based on Title 5
- Other characteristics: for use other than single-family dwellings, retention of less than 30% of lot area in its natural state with no more than minor removal of trees and ground vegetation.
- Rendering impervious more than 15% or 2,500 square feet of any lot or parcel but less than 30%\*
- Rendering impervious more than 20% but less than 50% of any lot or parcel \*

← Town of Littleton, MA / Division 1: Town Meeting Enactments / Part II: General Legislation / Zoning  
Article V Use Regulations →

☐ § 173-26 Use regulations schedule.

Uses	Districts				
	R	VC	B	IA	IB
Commercial power generation	N	N	N	N	N
Self-storage facilities	N	N	N	P	P
INSTITUTIONAL USES					
School					
Exempt by statute (MGL C. 40, § 3)	Y	Y	Y	Y	Y
Other	N	Y	Y	Y	Y
Church or other religious use	Y	Y	Y	Y	Y
Fraternal, charitable and nonprofit organization	A	Y	Y	Y	Y
Library, museum, hospital	Y	Y	Y	Y	Y
Conversion of municipal building <sup>6</sup>	P	P	P	P	P
Municipal use not elsewhere more specifically cited	Y	Y	Y	Y	Y
RECREATIONAL USES					

Town of Littleton, MA Zoning Ordinance, Use Regulation Schedule, as amended. Municipal Use Permitted in "R" Residential District.

- A. General. Adequate off-street parking must be provided to service all parking demand created by new construction, whether through new structures or additions to old ones, and by change of use of existing structures. Such parking shall be either on the same premises as the activity it services or within 300 feet on a separate parcel, which may be jointly used with other premises for this purpose, provided that the continued joint use of such parcel is ensured through an agreement recorded in the Registry of Deeds.
- B. Schedule of parking area requirements. In applying for a building permit or certificate of use and occupancy, the applicant must demonstrate that the following minimums will be met, unless, in performing site plan review (see § 173-16), the Planning Board determines that special circumstances render a lesser provision adequate for all parking needs. If such lesser provision is allowed, the Planning Board may impose such conditions as it deems necessary. Applicant is encouraged to consider shared parking as a possible means of reducing total parking area, subject to Planning Board approval.  
[Amended 5-8-1995 ATM, Art. 32; 5-4-1998 ATM, Art. 34; 5-8-2000 ATM, Art. 27; 11-8-2005 STM, Art. 5]
- (1) Dwellings: two spaces per dwelling unit.
  - (2) Motels, hotels, lodging houses: one space per guest unit, plus one space per employee.
  - (3) Retail stores: one space per 150 square feet of leasable floor area.
  - (4) Offices: one space per 250 square feet of gross floor area, or, if the Planning Board determines that the occupancy can adequately be predicted and controlled, one space per 1.25 employees on the largest shift.
  - (5) Industrial, wholesale: one space per 1.25 employees on the largest shift.
  - (6) Restaurants: one space per four seats, plus one space per employee on the larger shift.
  - (7) Places of assembly: one space per four seats.
  - (8) Hospitals: three spaces per bed.
  - (9) Nursing homes: one space per four beds.
  - (10) Bowling alleys: four spaces per lane.
  - (11) All others: one space per 250 square feet of gross leasable area.
  - (12) Motor vehicle service stations: one space per pump plus one space per employee, plus three spaces per

Town of Littleton, MA Zoning Ordinance, Parking Requirements, as amended.

# Building Code Summary

## Existing Building

The existing structures at the King Street complex are currently determined to be a type “A” Assembly use inclusive of business and storage use as incidental use over 100 square feet.

The construction consists of original rough stone foundation and slab on grade with wood frame and wood exterior walls classifies as Type V requiring the fire resistance ratings highlighted in the chart below:

The 2000 structure floor system appears to be a 4” reinforced concrete slab on grade with a 2.5” thick hardwood floor system. The structural system classifies as Type IV requiring the fire resistance ratings highlighted in the chart below:

**TABLE 601  
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)**

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary structural frame <sup>f</sup> (see Section 202)	3 <sup>a</sup>	2 <sup>a</sup>	1	0	1	0	HT	1	0
Bearing walls									
Exterior <sup>e, f</sup>	3	2	1	0	2	2	2	1	0
Interior	3 <sup>a</sup>	2 <sup>a</sup>	1	0	1	0	1/HT	1	0
Nonbearing walls and partitions	See Table 602								
Exterior	See Table 602								
Nonbearing walls and partitions									
Interior <sup>d</sup>	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 <sup>1/2</sup> <sup>b</sup>	1 <sup>b,c</sup>	1 <sup>b,c</sup>	0 <sup>c</sup>	1 <sup>b,c</sup>	0	HT	1 <sup>b,c</sup>	0

For SI: 1 foot = 304.8 mm.

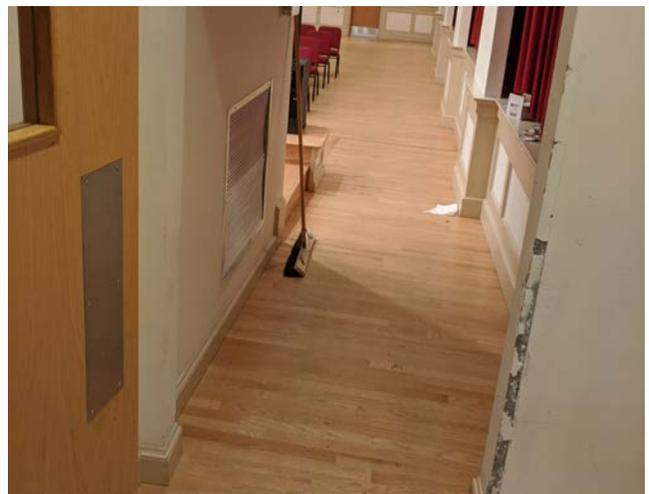
- a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
- c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
- d. Not less than the fire-resistance rating required by other sections of this code.
- e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).
- f. Not less than the fire-resistance rating as referenced in Section 704.10.



View of existing elevator.



View of front entrance.



View of sloped walk leading from lower area to the stage.

# Accessibility

Previous renovations to the King Street complex addressed site and interior accessibility, however, further measures are recommended to remove remaining barriers and meet today's standards for universal access.

Renovations to the building should take into consideration the potential for costly upgrades that may be required to bring the building into conformance with current regulations. Full compliance with ADA/MAAB are required when the value of work exceeds 30% of the full and fair cash value of the building. See also Civil Engineering, Building Summaries, and Conveying assessments for further information.

## Existing Exterior Conditions

Accessible parking spaces are present in the main lot entrance. Most building entries can be approached via accessible routes.

Main entry appears to have an accessible approach. Accessible parking spaces are located at the rear of the building. The Main entrance is also via an automatically accessible door.

## Existing Interior Conditions

Routes to public spaces within the complex generally appear to meet accessibility requirements. At least one men's and one women's restroom appears to fully comply with accessibility requirements. The layout of each level is sufficiently wide to allow for an accessible route to public spaces. Doorways throughout appear to be sufficient accessible in width, push/pull clearances thresholds and hardware with some exceptions. Most permanent rooms and stairs appear to have accessible signage.



View of exterior main entry walk level with parking lot



View of ADA stall at typical restroom.





Town of Littleton School Department

Received  
Thursday 4/23/98  
**MULLANEY CORPORATION**  
General Contractors  
Construction Managers

PROGRESS  
APR 21  
PRINT

of Littleton School Department

RECEIVED  
APR 22 1998  
MULLANEY CORP.

SITE PLAN OF LAND IN  
**Littleton, Mass.**  
PREPARED FOR  
**Indian Hill Arts**  
SCALE 1" = 20'  
**David E. Ross Associates, Inc.**  
CIVIL ENGINEERS  
LAND SURVEYORS  
ENVIRONMENTAL CONSULTANTS  
P.O. BOX  
JOB NO. 7458 (TEL. NO. 772-6232) PLAN NO. 10F1



# System Assessment Summaries

## Exterior Vertical Enclosure



Typical interior view of an upper story room. The window hardware is in generally good operating condition.



General view of the exterior windows and the various sizes and combinations.



View of a typical window sill, generally the window is in good condition, the wood trim however needs to be addressed.



This photograph shows loss of the sealant at the window perimeter as well as some dirt which can be cleaned.



General view of the exterior windows and the various sizes and combinations.

# Windows

## Recommendation:

**Maintain**

## Timeline:

**10-15 Years**

**Windows are showing signs of age but can remain in-use; consider replacement during building renovations.**

## Existing System Overview

The existing windows on the Performance Hall portion of the building are noted on the as-builts dated May 31, 2000 as being "Anderson" "Perma-Sheild". These are aluminum-clad wood casement windows and were manufactured between 1999 to present day. Windows consist of brown painted aluminum (exterior) with insulated glazing units and painted wood (interior). The windows on the "existing to remain" portion of the building also appear to have been replaced during that addition and renovation project as well however two different colors exist on this building. There are a brown color which is referred to as "Terratone" and the other color is "White". The average life of the average window unit similar to this is roughly 20 years.

## Observed Conditions

Most of the windows units appear in generally good condition. The exterior Kynar painted finish is showing signs of fading and chalking.

The glazing seals will begin to reach their life expectancy and begin to loosen and fall. These should be monitored for signs of moisture between the panes of glass.



View of exterior wall, plant growth at base and on wall should be removed.



General view of the exterior masonry stair.



Photograph of the exterior landing, sand and moss should be cleared regularly.



Photograph of the exterior landing and stairs, leaves and lichen should be cleaned regularly.



Photograph of the exterior landing and stairs, sand and moss should be cleared regularly.

# Exterior Masonry

## Recommendation:

**Maintain**

## Timeline:

**20-40 Years**

**Properly maintained, this exterior masonry will last many decades.**

## Existing System Overview

The existing exterior masonry site wall consists of varied flagstone with a solid stone cap. The exterior stair treads and landings appear to be solid Bluestone.

## Observed Conditions

Overall the masonry appeared to be in great condition for its age. The stone caps and stair treads appeared to have some organic growth on them, which could be cleaned with an appropriate masonry cleaner.



Close up photograph at typical clapboard siding shows signs of paint loss.



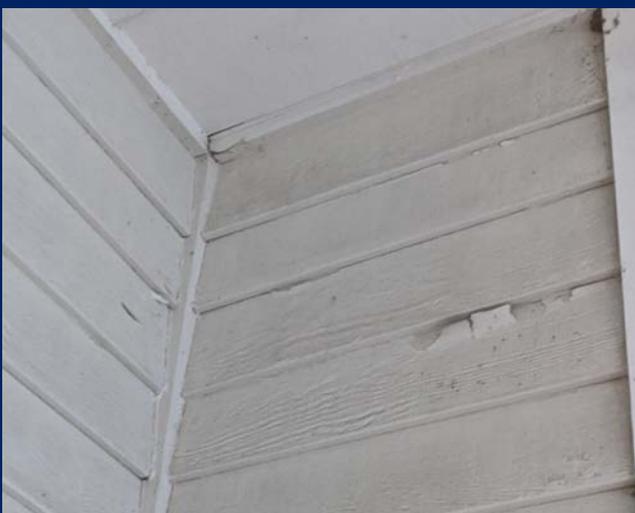
Close up view at a location where paint loss is occurring on the siding.



Exterior corner shows paint deterioration and mitred joints that have begun to separate.



Generally the exterior siding should be cleaned to remove organic growth.



Interior soffit close up shows paint loss from siding.



Close up detail where siding meets foundation wall, this joint should be cleaned and sealant applied.

# Exterior Siding

## Recommendation:

**Repair/Maintain**

## Timeline:

**2-5 Years**

**Some clapboard are failing or missing; roughly 2% of the exterior facade will require repair during initial building renovations.**

## Existing System Overview

The exterior cladding system for this building is a combination of painted wood clapboard and trim. Original wood clapboard would have been installed with the original building, date is unknown. During the 2000 build on the addition, new painted clapboards and trim would have been installed.

## Observed Conditions

Generally the clapboard appears to be in good condition. Some clapboards are damaged, either due to aging and natural wood joint movement, and some due to impact or other external forces.

At a minimum, we suggest repairing the open joints to ensure a weather tight building envelope in the interim.



View from the ground at roof soffit where small repair was attempted to enclose lost wood trim. Condition to be monitored.



Close up view of failing paint finish and potentially damaged wood substrate.



Water damaged trim board at gutter bracket, paint loss and trim should be repaired to prevent further damage.



Close up view of trim transition condition where paint finish is beginning to fail.



A typical corner condition showing paint loss and amage to trim boards.



This photograph shows the condition of the roof trim and loss of finish paint exposing the wood substrate.

# Exterior Trim

**Recommendation:**

**Repair**

**Timeline:**

**0-2 Years**

**Some trim is damaged and should be replaced.**

## Existing System Overview

The exterior trim is painted wood trim. Original trim would have been installed during the 1990's build. New trim would have been installed for the 2000 renovation and addition on new work areas only.

## Observed Conditions

The existing painted trim occurs on all of the facades. Generally there is running trim at the wall base, window and door frames, roof eaves and projections and corner trim boards at each exterior corner.

Most significantly, there are some trim boards that are failing and will need to be repaired to prevent further water infiltration and damage. These sections present significant potential for water infiltration and subsequent damage to the building and interior walls and insulation.



Wider exterior view shows general aged trim and paint and loss.



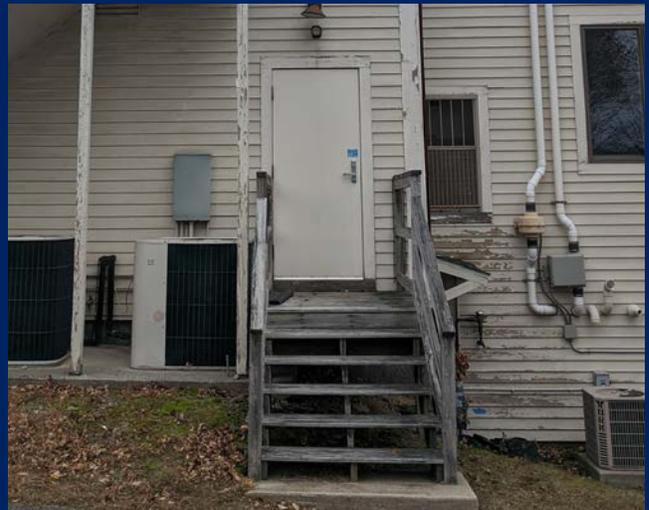
The main entrance doors are covered and is generally in good condition.



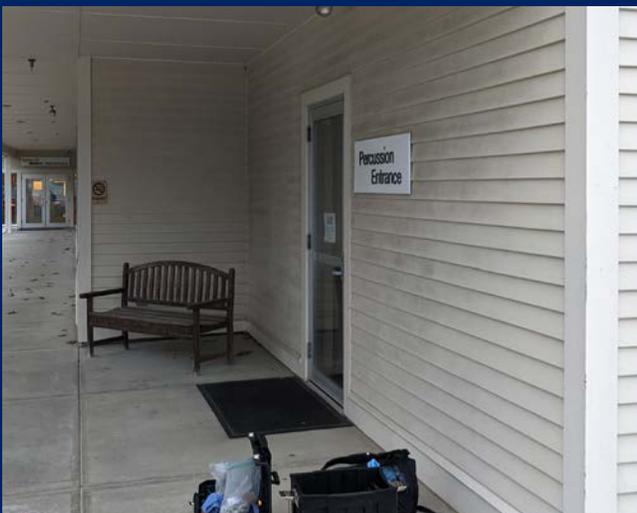
This door and frame from the basement are reaching the end of useful life and should be replaced with an FRP door and frame.



The side exit door from the Auditorium is covered and is generally in good condition.



The hinges on this door appear to be rusting, and should be monitored and replaced if not serviceable.



The door for the Percussion Entrance is covered and is generally in good condition.



The hinges on this door appear to be rusting, and should be monitored and replaced if not serviceable.

# Exterior Doors

## Recommendation:

**It is recommended that most doors be maintained.**

## Timeline:

**5-10 Years**

**The exterior doors are in decent condition and will remain servicable for many years with proper care.**

## Existing System Overview

The exterior doors for this building are a combination of aluminum storefront with insulated glass and painted insulated steel doors. There also appears to be one wood door with insulated glass. Original doors would have been installed during the 2000 renovation. There does not appear to have been any additional work done on the doors. If used for a new program, we recommend re-keying hardware.

## Observed Conditions

The existing aluminum storefront with insulated glass generally appear to be in good condition. Some of the finish can be seen, this is typical of similar finishes of this age in this environment. Salts and other ice prevention materials used near the entrances has shown to wear on doors in similar conditions, the main entry doors however are covered and appear in generally good condition. There is one door and frame that needs attention, this door exits from the basement to the exterior and can be seen in the top right photo on the opposite page.



# Roof & Rainwater Management



Detail view at valley intersection, vertical wall shows organic growth. Streaking and staining can be observed.



Streaking and staining can be observed at one of the skylights on the north roof.



Abrasive wearing can be observed at the SW corner under the tree canopy.



Detail view at chimney. Streaking and staining can be observed.



Overall view from the north east side looking at the Performance Hall. Streaking and staining can be observed.

# Roofing - Asphalt Shingle

## Recommendation:

Reuse/Maintain

## Timeline:

5-10 Years

**The southwest corner of the roof appears to be wearing at a greater rate than the rest of the roof areas, as an adjacent tree canopy is most likely abrading the shingle surface with wind movement of the branches. Suggest an arborist review and provide professional corrective measures of the tree.**

## Existing System Overview

The as-built drawings from the 2000 renovation indicate that new asphalt shingles, identified as "Bird 90 Architectural Shingles". Bird Shingles was one of the oldest manufactures of roofing products in the USA. Now CertainTeed owns this company.

The existing building was identified as existing asphalt shingles to remain. It is unclear if the entire roof was re-roofed at some point as the shingle wearing and coloring appears consistent across all roofs.

## Observed Conditions

The asphalt fiberglass shingles identified in the construction set of drawings are 25 year Fiberglass Shingles, over 15# roofing felt over 5/8" plywood roof sheathing on the new performance space.

The existing shingles on the existing building were identified "to remain", but the assumption is that the shingles exist over roofing felt paper over wood deck.

The shingles for the most part appear to be in generally good shape, with little observed granular loss. The southwest corner of the roof appears to be wearing at a greater rate than the rest of the roof areas, as an adjacent tree canopy is most likely abrading the shingle surface with wind movement of the branches.

The asphalt shingle roof, being installed in 2000 is roughly 21 years old. We anticipate that this roof based on the observations that we made has in our opinion another 5-10 years life expectancy before replacement is required.

We suggest implementing an inspection plan at the end of the fall season to clean leaves, periodically during the winter after severe storms to identify ice build up and damage in the gutters, and at the end of the winter season.



# Interior Conditions



  
Please remember to wash your hands with soap and water before and after your lesson.  
Thank you!

UP

PLEASE FEED THE  
ANTHROPOMORPHIC  
FIGURE IN THE HALLWAY!

1

# Space Use & Comfort

## **Recommendation:**

Reorganize and renovated departments as informed by program needs.

## **Time line:**

The Town shall inform how and when the needs of departments can best be met. Space use studies, conducted as part of this project, may inform decisions.

## **Existing System Overview**

Generally, the building complex is well maintained. The quality of the finishes and fit out of the complex varies slightly by program. Most of these rooms appear to have been renovated during the 2000's. The spaces appear to have been suited to specific needs over the years and will need to be adapted or renovated to suit new programmed uses.

## **Observed Conditions**

**Upper Level:** This level generally houses the classrooms and the balcony for the multi purpose auditorium space. Finishes are generally in good condition and appear to be well maintained.

**Entrance Level:** This level generally houses the administration offices, classrooms and the multi purpose auditorium space. Finishes are generally in good condition and appear to be well maintained.

**Basement Level:** This level houses the a small teaching classroom, conference room, but mainly house the maintenance areas and storage and have dated finishes.



# Miscellaneous



View of existing elevator. (First Floor)



View of existing elevator. (Second Floor)



View of existing elevator. (Basement)

# Conveying

**Recommendation:**  
Maintain.

**Timeline:**  
0-2 years Maintain.

## Existing System Overview

The King Street complex is served by one elevator.

The main elevator is located between the Open Lobby area and Office Wings. The elevator is a one sided passenger model and meets the size requirements for an existing elevator ( min. 48"x48") as part of an accessible route. The elevator is operational but dated. Its location anchors the main lobby and open area, but could distrupt future programs as it is not seperated from connecting the open area. This allows the elevator to be shared but makes for highly confusing and complicating way finding. It is recommended that if the building were renovated, that the elevator be closed off of the open area to allow for uninterupted use.

It is recommend that the elevator be further evaluated by a certified elevator maintenance company and maintained or improved based on their recommendations.



Elevator Machine Room equipment (Basement)



No real building directory, handled by signage taped to doors. (Second Floor)



Typical room sign on each level. (Classroom - Basement Floor)



Main Entrance signage under main canopy, hard to determine from the parking lot. (First Floor)



Rooms have Room Designation, Dedication Plaques, and have signs taped to the walls.



Exit routes & stairs have signage indicating proper means of egress. (Second Floor)

# Way Finding

## Recommendation:

Improve way finding through signage and/ or redesign.

## Timeline:

Any short term improvements that can be made would be beneficial. More comprehensive design improvements are recommended for consideration in future renovations.



Notice boards at main entrance. (Office Wing-)

## Existing System Overview

Way finding throughout the King Street complex is challenging primarily due to the design of circulation between the linked structures and lack of Main Directory and Map.

The complex was originally constructed as a school with second level front entrances oriented to the parking lot. When the structure was renovated to serve its new Music Hall, accessible entrances convenient to parking were required. With the exception of the main Library entrance, the complex is now accessed from several entrances on the first level of the complex.

The architecture of the long canopy conveys little to inform a visitor of the significance of each of the multiple entrances. Signage, while present, does little to orient first time visitors.

It is recommended that exterior signage be improved to more clearly convey the location of departments.

Visitors must stop to read signs to understand how to navigate to their destinations. This is particularly true at the primary entrance to the Music Hall, main offices and second floor areas.

Generally, way finding directories are present throughout the building and most spaces are identified with braille signage. In some cases signage is missing or inadequate.

It is also recommended that future renovations be designed for intuitive way finding; providing visitors with lines of sight, landmarks and architectural queues that provide visitors with a sense of orientation.



Security devices in the Lobby. (First Floor)



Door contact can be seen in upper right hand corner of this exterior door. (First Floor)



Security device at end of corridor. (Offices - First Floor)

# Security

## Recommendation:

There is no active visual security system on the building. There does appear to be a traditional system in place with sensor and keypads.

## Timeline:

Any short term improvements that can be made would be beneficial. More comprehensive design improvements are recommended for consideration in future renovations.

## Existing System Overview

Security at the King Street building is currently adequate.

A security report, previously conducted by others, for the Shattuck Street complex should be referenced in full. Generally this report recommends that:

- Proper lighting levels be achieved in stairwells,
- Motion sensor light switches be installed
- Exterior cameras be installed at all:
  - Exterior doors in use
  - Exterior walls, including niches
  - Grounds, including fields and parking lots
- Interior cameras be installed at all:
  - Hallways
  - Corridors
  - Niches
  - Stairwells (priority)
  - Elevators (priority)
- Plantings be trimmed to improve sight lines
- Signage be improved to improve traffic flow

In the course of this assessment it was observed that the structure's multiple entrances and means of egress are difficult to monitor without cameras. They have manual locks that are difficult to secure. Key distribution generally is challenging to control. Replacement of all exterior and interior door locks with a digital access system would greatly improve security.

A centrally located, monitored entrance, creating a buffer between staff and public, would greatly improve security.

It is not confirmed if panic buttons are currently in place. That system should be supplemented in renovations to protect those programs identified as potentially vulnerable.

Monitoring of these cameras and a system of saving videos should be implemented as recommended by others, and potentially tied into other municipal systems if that is a long term goal.



Security notification outside the Main Entrance. (First Floor)



View of existing patio space outside of the office wing.

# Sustainability

## Recommendation:

It is recommended that during replacement of major equipment, materials, and systems that upgrades are made to improve energy efficiency, reduce water consumption, improve the thermal envelope and indoor air quality, and make use of long lasting environmentally friendly materials.

## Timeline:

Improve as short and long term needs and opportunities arise.

## Existing System Overview & Recommendations

The structures that form the King Street complex generally act as a single building from an environmental standpoint and share common sustainability challenges.

The thermal envelope is generally insulated or sealed as required under the code when it was constructed. The wood framed walls of the structures are expected to have insulation.

The roofs have dark asphalt shingles over asphaltic membrane, newer shingles are lighter in color and can help to reduce heat gain and the energy required to cool the complex in summer months. In this climate further study is required to determine if this results in a net, year round, energy savings since heat gain in winter months would be beneficial.

The double glazed windows are nearing the end of their useful life, poorly sealed, difficult to operate, and provide little insulation value. These are recommended for replacement.

The existing structure does have inherent value as embodied energy. Its renovation and reuse would save on energy invested in the construction of a new structure.

Public transportation serves the site and bike racks can be installed for those who arrive there under their own power.

It is recommended that Renovations to the site be made in consideration of retention of site water runoff and reduction in heat island effect of the large paved parking area.

**MECHANICAL:** Heating, cooling and ventilation systems appear to be of adequate energy efficiency to meet energy code minimums. Ventilation air is assumed to be adequate for appropriate indoor air quality. It is recommended that, during replacement of major equipment, that upgrades are made for energy efficiency and better indoor air quality. Modern mechanical systems are more efficient than what is currently in place. Occupants have little control over their comfort due to the mechanical zones, layout of thermostats, and inability to operate windows.

**ELECTRICAL:** The electrical distribution equipment is in good condition and may be reused and adjusted per the BER findings. The lighting throughout the complex is typically fluorescent. Energy consumption would be reduced if interior LED lighting and automatic occupancy sensors were installed and if the existing site lighting were replaced with LED fixtures.

**PLUMBING:** Existing plumbing fixtures generally lack automatic controls or limits on water usage. Replacement with modern fixtures with these features is recommended.



## V. Supporting Reports

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# Memorandum

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**To:** LLB Architects  
**From:** Eric Wilhelmsen  
**Subject:** Field Observations and Recommendations  
**Date:** December 10, 2020  
**Project:** Littleton Town Hall Space needs, 36 King Street

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On November 12, 2020 CDW performed a visual inspection of the property at 36 King Street in Littleton, MA. CDW has also reviewed the available site plans on the property, including sheets from “Proposed Site Plan for Field Stone Farm”, dated March 5, 1991; sheets from proposed Indian Hills Art School and Performance Hall Addition, dated July 1995, as well the septic modifications from 1995, which installed a new 2,000 gallon septic tank in preparation for the Indian Hills Art School building modifications. Additionally we have reviewed a as-built septic plan for the site prepared prior to the Indian Hills Art School, which appears to have been prepared sometime in 1991, the dates are partially cut off on the sheet provided. Based on our visual inspections and plan review our observations and recommendations are as follows.

## **Observations**

The site generally slopes from North to South towards King Street. Along the front of building there are driveway entrances along both the east and west sides, with a paved fire lane between the two providing direct exposure to the front of the building. The relatively flat upper parking lot is primarily access from the easterly driveway, which has a moderate slope up from King street.

On-site drainage is provided by a series of catch basins connected to underground perforated infiltrating drainage pipes. An existing gas service comes off King Street and connects to the building’s west side. An on-site utility pole at the eastern driveway, provides some site lighting, an overheard wire to the building, and underground connections. A water service is connected to the building along the east side, extending up the eastern side of the property. The 1991 septic as-built shows water main heading easterly on to the abutting property, but does not show a final connection point, nor is the existing size labeled.

Sewer is provided by an on-site septic system, comprised of a 2,000 gallon septic tanks, and two 50-ft long infiltration trenches. Per the 1995 tank upgrade calculations, the system septic system has a design flow of 844.5 gallons per day (GPD), with a maximum flow allowed of 845 gpd, due to the site being in an Aquifer Protection District. Prior to 1995 the permitted system flow was 686.7 GPD, revised to 840 GPD with the 1995 update. See the Septic System Calculations for additional information.

## **Recommendations**

Based on the observations made at the site during the inspection, CDW recommends the following repairs and improvements:

Portions of pavement within the western and eastern driveway entrances as well as the connecting fire lane, the driveway along the east side of the building, and the rear parking lot are cracked, worn, and contain vegetation. These areas should be repaved and regraded as necessary.



The area around the catch basin in the driveway at the western entrance as well as the northwestern and northeastern corners of the rear parking lot should be regraded to eliminate the stormwater ponding that is occurring in these areas.

The northwestern and northeastern corners of the rear parking lot should be regraded to eliminate the stormwater ponding that is occurring.

A pothole at the very corner of the western driveway and the street should be filled.

The easternmost handicap space at the rear of the building may be sloped greater than 2 percent and would require regrading to be in ADA compliance.

The catch basin along the eastern driveway entrance just off the street pavement is buried in leaves and dirt and should be uncovered and cleaned.

### **Septic System Calculations**

The existing Septic System consists of a 2,000-Gallon Septic Tank, Distribution Box, and a leaching field consisting of two 50-ft long stone trenches. The maximum allowable design flow for the existing septic system is 845 gallons per day (GPD), due to the site being located in an Aquifer Protection District.

In 1995 the existing system was upgraded to allow for the construction of a new auditorium/hall addition. The upgrade consisted of replacing the existing 1,500-Gallon Septic Tank with a new 2,000-Gallon Septic Tank as well as replacing the building sewer connecting. The design flow was increased from 686.68 GPD to 840 GPD. The new design flow was below the maximum allowed for the existing soil absorption system but required a 2,000-Gallon Septic Tank be installed. The current design flow is based on the building being used as a school with a gpd per person calculation for students and staff, and a per seat gpd for the performance hall/auditorium.

The maximum allowable design flow of 845 GPD is based on a limit of 6 gpd per 1,000 sq.ft. of lot area. We have provided some examples for a change in use for either 100% office space, and combination of office space and the performance hall/auditorium as an “function hall” use.

#### **Calculations for conversion to 100% Office Space**

Building Area: 12,196 SF → (Assessors Records)

Office Use: (75 GPD)/(1,000 SF) → (Title V)

Design Flow = (12,196 SF) x (75 GPD/1,000 SF) = 914.7 GPD

#### **Calculations for conversion to Senior Center**

Office Area: 8,452 SF (2-Story, main building) → (Assessors Records)

Function Hall: 110 Seats (1-Story Addition)

Office Use: (75 GPD)/(1,000 SF) → (Title V)

Function Hall Use: (15 GPD)/Seat → (Title V)

Design Flow = (8,452 SF) x (75 GPD/1,000 SF) + (110 Seats) x (15 GPD/Seat) = 2,283.9 GPD



The original calculations appear to have used a flow of 3 gpd per seat according to the Theater/Auditorium design guides, while a “function hall” at 15 gpd seems more appropriate for a senior center use. More specific change of use calculations will need to be prepared to accurately reflect the anticipated design flows. The 6 gpd per 1,000 sq.ft., lot area limitation of 845 gpd, may be able to be overcome if this facility and lot could be calculated in the aggregate by combining the area with the abutting Town owned school property at 56 King St. Additionally, the Indian Hill Arts building at 36 King St, parcel U42-2-0, abuts 32 King Street, parcel U42-2-1, both are currently listed as owned by Indian Hill Music, Inc. The 845 gpd limitation is based only on 36 King St, parcel U42-2-0. If both parcels, U42-0-0 and U42-2-1, were combined the design flow limitation increases to approximately 1,084 gpd.

See also itemized observations and photos on following pages.



View from tennis court stairs  
toward main entrance



Overall parking lot view, shows  
painted vehicular arrows



View from tennis court stairs  
toward main entrance



Rear parking lot view



View from parking lot



Rear view of building from adjacent lot



Fire access along side of building



Rear view of building from adjacent lot towards King Street



Catch Basin at Main Entrance off King Street



Handicap parking at Main Entrance



Looking up towards Parking lot at rear of of Building



Entrance stairs to adjacent school tennis courts

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Electrical & Fire Alarm  
Fire Protection & Plumbing  
Mechanical



***Assessment Report***

**Littleton Town Hall and Senior Center  
Littleton, MA**

**PREPARED FOR:**

LLB Architects  
161 Exchange Street  
Pawtucket RI 02860

**PREPARED BY:**

Building Engineering Resources, Inc.  
David Knight, PE – Mechanical  
Dan Carroll, PE – Electrical

**DATE:**

December 10, 2020

## **GENERAL**

The town of Littleton, Massachusetts has retained the services of this design team to evaluate 36 King Street in Littleton, MA, and comment on the suitability of this facility for use by the town as a new senior center. The town hopes to be able to gain an understanding of the scope of repairs and modifications required to occupy this building and use it as intended.

## **MECHANICAL**

### *Heating and Cooling*

This building is cooled and heated by a combination of different systems in order to achieve occupant comfort. All systems are split type, utilizing air-cooled condensing units paired with split evaporator coils for cooling and gas-fired furnaces for heating. Some, newer furnaces are high efficiency type, natural gas-fired with sealed combustion (direct vent and intake pipes). Older units are atmospheric, B-vent style, using indoor room volume as the basis for combustion air. Cooling is standard efficiency, grade-mounted compressor/condensing units. The systems and zoning appears to be broken out as follows based on visual observation, unit placement and approximate ductwork routing:

- *Room 102:* Split system gas furnace in basement, York P2URD10
- *Room 101:* Split system gas furnace in basement, Carrier 398AAZ060
- *Room 207:* Packaged unit in attic, Armstrong 48HWC241
- *Room 208 & Front Side Offices:* Packaged unit in attic, Armstrong 36HWC241
- *Breakroom & Kitchen:* Packaged unit in attic, Armstrong 36HWC241
- *Main Lobby:* Split unit with inline duct furnace in attic, Make/Model indistinguishable on split, Reznor inline furnace
- *Main Offices & Front Doors:* Split system gas furnace in storage room adjacent to 201, York P3DHA10
- *Front Offices:* Split system gas furnace in connector room between 201 & 210, Trane TDH1D11
- *Recital Hall:* Four (4) 2-ton split system gas furnaces in mechanical attic behind stage, York P3URC20/H4DH024

### *Ventilation*

Ventilation is provided to the building through the various air handling systems. It is assumed that adequate outdoor air is provided, but this should be confirmed prior to occupation in order to assure adequate indoor air quality for the proposed program use.

There are small kitchen areas within the building, however none of them currently utilize any formal type of exhaust fan or capture hoods.

Restrooms utilize ceiling cabinet fans switched locally with the lights and vented sidewall.

### *Zoning*

Based strictly on visual observation, the exact zoning of this building cannot be determined. There are however some general assumptions that can be made based on the quantity of units and their locations – see above.

### *Miscellaneous Heating and Cooling*

Some areas throughout the building have required independent heating and/or cooling in order to best serve the proposed purposes. Vestibules, IT rooms, and mechanical rooms are served by smaller dedicated systems as required. IT rooms may need cooling year-round and have a dedicated split system, while utility spaces are equipped with a dedicated heating device, either hot water or electric.

### *Controls*

All equipment and systems are controlled locally utilizing programmable thermostats.

There does not appear to be a central Building Automation System (BAS) that can oversee and control all HVAC equipment. Instead, it appears that each system is controlled independently by a dedicated thermostat. It is undetermined at this time how any outdoor air damper operators are controlled. Basic function/logic would suggest that outdoor air dampers are interlocked with the respective fan “on” function of the air handler(s) they serve.

### *Conclusion & Recommendation*

Most of the existing HVAC units are newer and appear to be in good condition and should be useful for another 5-10 years with proper maintenance. Some are in fair condition with respect to the outdoor compressor/condensing units and may be reaching the end of their prospective useful life (< 5 years). Typical annual maintenance for split DX systems with gas furnaces includes outdoor coil cleaning, checking refrigerant charge levels, and checking indoor unit components for proper functionality (blower fans, intake and combustion air path, draft inducers, and flame/combustion integrity). Quarterly maintenance should include filter changes.

The operation of outdoor air dampers that are used in conjunction with any of the indoor units should be evaluated by a HVAC technician. The evaluation should check that dampers are normally closed and index to open position for occupied thermostat cycles only, when supply fans are enabled. In conjunction with damper actuation, outdoor airflow measurement should be done to ensure that minimum required levels of fresh air are provided to high occupancy spaces (namely the Recital Hall).

## **ELECTRICAL**

### *Building Electric Service*

The building electric service is a 600 amp, 120/208 volt, 3 phase, 4 wire.

### *Electrical Distribution*

The electrical distribution system consists of the following: 600 amp CT cabinet and 600 amp 3 pole main circuit breaker, 120/208 volt, 3 phase 4 wire distribution panel section #1 (Siemens CDP-7 Panelboard) and distribution panel section #2 (Cutler-Hammer Pow-R-Line C PRL4 Panelboard). The above referenced distribution panel has the following circuit breakers: In section #1: 100 amp 3 pole circuit breaker for Panel 'PLL', 100 amp 3 pole circuit breaker for Panel 'PGH', 150 amp 3 pole circuit breaker for Panel 'P1C', 150 amp 3 pole circuit breaker for Panel 'P2' and a 200 amp 3 pole circuit breaker for Panel 'P1B'. In section #2: 200 amp 3 pole circuit breaker for Panel 'P' and a 200 amp 3 pole circuit breaker for Panel 'PP'.

Panel 'PLL' is located in the main electric room,

Panels 'P1B' and 'L1B' are located in the office area corridor. Panel 'L1B' is fed from a 50 amp 3 pole circuit breaker located in Panel 'P1B'.

Panel 'P2' is located in the second floor corridor by the exterior wall stairwell.

Panels 'P' and 'PP' are located in the second floor sound room.

Panel 'P1C' is located on the exterior of the building next to the air conditioning condenser units.

### *Lighting*

The building lighting consists of fluorescent lighting fixtures in lobbies, offices, corridors, restrooms, stairwells, utility rooms and storage rooms. The recital hall has fluorescent surface mounted cylinder lighting fixtures and incandescent theater lighting fixtures. The site lighting consists of metal halide shoe box head lighting fixtures on wood poles.

### *Emergency Lighting*

The building emergency lighting consists of emergency battery unit with two heads in corridors, stairwells, restrooms and the recital hall. Emergency battery units with remote heads at the exterior egress doors. Exit signs are fluorescent with battery back-up. (Note: The existing emergency lighting in the corridors do not provide the Code requirement light levels. The second floor restrooms do not have emergency lighting. Some of the exterior egress doors do not have emergency lighting.)

### *Lighting Controls*

The building lighting controls consist of wall switches for lobbies, offices, corridors, restrooms, stairwells, utility rooms and storage rooms. The recital hall has a Lutron dimming control panel. The site lighting is controlled by a time clock.

### *Fire Alarm System*

The building fire alarm system is a 10 zone conventional fire alarm control panel (Silent Knight #5280) with manual pull stations at egress doors, smoke detectors, heat detectors and duct smoke detectors. The notification system consist of horn/strobe units in the lobbies, corridors and restrooms. An EVAX conventional voice evacuation system

is provided for the recital hall. The transmission of an alarm to the fire department is via an 8 zone radio master box (King-Fisher Company).

### *Materials*

The lighting branch circuit consists of MC cable and nonmetallic sheathed cable for concealed lighting branch circuit wiring with conduit and wire for exposed lighting branch circuit wiring. The receptacle branch circuit consists of MC cable and nonmetallic sheathed cable concealed receptacle branch circuit wiring with conduit and wire for exposed receptacle branch circuit wiring. The HVAC equipment branch circuit wiring consists of conduit and wire. The plumbing equipment branch circuit wiring consists of conduit and wire. (Note: The proposed building use does not allow for nonmetallic sheathed cable for lighting/receptacle branch circuit wiring. The existing nonmetallic sheathed cable lighting/receptacle branch circuit wiring may have to be removed.)

### *Conclusion & Recommendation*

The electrical distribution panel is in good condition and may be reused. Existing Panels 'PLL', 'P1B', 'L1B', 'P1C' and 'P2' are old and should be replaced. Panels 'P' and 'PP' are in good condition and may be reused. The existing panelboard feeders may be reused if the new program layout allows the existing panels to remain in the existing locations.

The existing fluorescent lighting fixtures shall be replaced with LED lighting fixtures. The existing emergency lighting system shall be replaced with emergency inverters installed in the new LED lighting fixtures as required to provide the Code specified emergency lighting requirements.

The lighting control system shall consist of wall vacancy dimming sensors. Lighting control panel with over-ride digital switches for lobbies, corridors and site lighting. Dimming room controllers with low voltage switches and ceiling sensors for conference rooms. Room controllers with low voltage switches and ceiling sensors for the restrooms.

Stairwells shall have lighting fixtures with factory installed motion sensors. The existing conventional fire alarm system shall be replaced with a new addressable fire alarm system. The existing fire alarm radio master box may be reused.

## **PLUMBING**

### *Domestic Water Service:*

A 2" steel pipe delivers city water to the building through the back corner of the original foundation at the northeast corner. The water entrance includes a meter, strainer and 2" reduced pressure zone backflow preventer assembly. A 2" copper riser tees off and runs laterally through the basement.

### *Domestic Water piping:*

Copper piping is used to distribute hot and cold domestic water through the building. Plumbing fixtures were checked for operation, and distribution piping is assumed to be adequate.

There is an existing exterior mounted vacuum breaker in a ¾" cold water supply line tapped on a hose bib connection mounted on the southwest corner of the building that appears to feed an irrigation system.

### *Gas Service:*

There is a 1" gas service delivering natural gas to the building from King Street to a main regulator and meter assembly at the southwest corner of the main building against the foundation. The main gas line tees off after the meter with a 1-1/2" running into the basement and 1-1/2" line running directly up the side of the building into the attic space. The gas lines serve heating equipment throughout mainly consisting of gas-fired warm air furnaces located throughout the building.

### *Domestic Water Heating:*

There are several small-capacity electric water heaters scattered throughout the building supplying domestic hot water to various fixtures. The main restroom cores of the building and the kitchen on the southwest side of the first floor include above ceiling tank type electric heaters. Each of the remote kitchenettes include a point of use Eemax style electric heater in the cabinetry below the sinks.

### *Fixtures & Accessories:*

Fixtures and accessories appeared to be adequate for future use. Kitchen/Kitchenette sinks are drop-in style, stainless steel. Lavatories are a mix of drop-in style vitreous china and wall hung vitreous china. Water closets are tank type, floor mounted vitreous china. Urinals are wall hung vitreous china with manual flush valves. Custodial service sinks are floor mount molded stone.

Existing fixtures should be evaluated based on any modifications for new program use of the building. If fixtures are replaced, low-flow fixtures are recommended.

### *Sanitary Waste & Vent Systems:*

Existing sanitary systems are operating adequately. There is a 4" cast iron sanitary line exiting the building and connecting to the town sewer system in the street. Sanitary mains throughout the building shall be snaked and scoped to evaluate for any internal corrosion.

### *Roof Drainage:*

There are no flat roof drains or internal storm piping at this building. The pitched roof assemblies shed to gutter and downspout assemblies that run-off to grade.

### *Conclusion & Recommendation*

The existing plumbing systems are adequate for the current use of the building. Necessary modifications would be dictated by and architectural modifications or change in program use. Refer to the Architectural assessments for analysis on adequacy of ADA compliant fixtures and use.

Installation of a new kitchen or kitchen appliances that are commercial grade, including a dishwashing sink (double or triple pot style) should consider a need for a grease interceptor. An an exposed, floor mount style unit, Zurn model Z1170 or similar is recommended. The nominal size of the unit should be evaluated based on anticipated use once the kitchen updates are design.

## **FIRE SUPPRESSION**

### *Fire Service Characteristics:*

This building has a 6" sprinkler water service from the street. The piping and appurtenances appear to be well maintained and fully operational.

### *Fire protection systems:*

The sprinkler water service reduces to 4" with a check valve assembly and tee fitting combining a 4" fire department connection line and up to a 4" Reliable dry alarm valve. The FDC runs back out of the building to a Siamese connection on the east side of the building. The dry alarm valve has a 4" riser that tees immediately and runs east/west within the basement and crawl space of the original building and the rear addition respectively. A Jenny air compressor mounted just below the main service assembly is piped into the dry valve to pressurize the system. The date of the last trip test at time of this site survey was 08/19/2020.

Sprinklers throughout the building are generally exposed pendent type or semi-recessed pendent type heads with escutcheon plates (5.6K, 155°F rated). Based on pure observation, it appears that sprinklers are spaced and designed for light hazard design criteria of 0.10 GPM over 1,500 sqft.

### *Conclusion & Recommendation*

The existing dry sprinkler system appears adequate and up to date for the current use of the building. Necessary modifications would be dictated by and architectural modifications or change in program use.

**END OF REPORT**

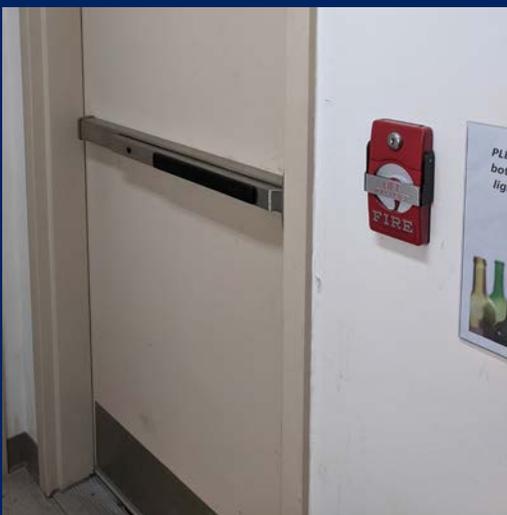
See also photos on following pages.



Fire protection system panels. (Basement)



Fire protection system panels. (Basement)



Typical fire alarm pull located throughout the building. (First Floor)



Typical Fire Alarm (strobe/alarms, exit signs and emergency lights) and Sprinklers throughout corridors and offices. (Second Floor)



Custodial sink. (First Floor)



U.C. Dishwasher and Sink at small kitchenette. (First Floor)



Existing fixtures appear adequate for fixture use. (First Floor)



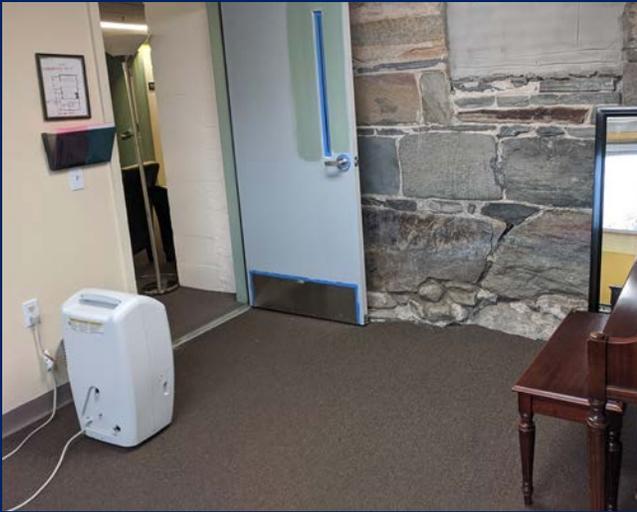
Existing fixtures appear adequate for fixture use. (Second Floor)



Existing fixtures appear adequate for fixture use. (First Floor)



Existing fixtures appear adequate for fixture use. (First Floor)



Portable dehumidifiers (Classroom - Basement)



Pipe distribution, typical. (Basement)



Electrical equipment. (Basement)



HVAC Equipment. (Basement)



Typical security and IT infrastructure in the building. (Basement)



Typical HVAC duct. (Second Floor)

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## **HAZARDOUS MATERIALS SUMMARY REPORT**

**Indian Hill Music Center  
26 King Street, Littleton, MA 01460**

Prepared for

LLB Architects  
161 Exchange Street  
Pawtucket, RI 02860

December 2020

CDW Project # 1861.30



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### Appendices

- Appendix A: Asbestos Laboratory Data Sheets
- Appendix B: Lead Paint Laboratory Data Sheets

## **1.0 INTRODUCTION**

CDW Consultants, Inc. (CDW), on behalf of our client, LLB Architects, has conducted a limited hazardous materials survey at the Indian Hill Music Center, 26 King Street, Littleton, Massachusetts (Figure 1, “Site”). The investigation was limited to readily available and accessible areas inside the Indian Hill Music Center building (“the building”).

On November 12, 2020, Mr. Alan Sundquist (Massachusetts Asbestos Inspector #AI900788) and Mr. Michael O’Brien (Massachusetts Asbestos Inspector #AI900977) conducted the inspection for suspect materials. An inspection is required by the United States Environmental Protection Agency (USEPA) National Emission Standards for Hazardous Air Pollutants (NESHAP), prior to scheduled building renovations or demolitions. The potential hazardous materials samples collected include, bulk samples for asbestos containing materials (ACM) and lead based paint (LBP).

After suspect materials were visually identified, bulk samples were collected. Samples were not collected of non-suspect materials, including wood, fiberglass, plastic/vinyl, concrete, neoprene/rubber, silicone, glass, and carpeting.

The areas covered during this survey include the interior and exterior building materials of the subject building which would be affected by renovation activities. Roofing materials were not inspected or sampled during this survey.

## **2.0 PROJECT UNDERSTANDING**

The hazardous materials survey was conducted via field investigation and research to identify the existence of hazardous materials, which may impact the project’s scope and cost. A visual inspection of the tower building was followed by the collection of samples for ACM, PCBs, and LBP. The sampling was somewhat limited due to the fact that the tower building was still operating and inhabited by staff during the time of the onsite inspection and it was not feasible to perform full destructive sampling techniques. Accessibility to the roof was not feasible at the time of the survey.

After being granted inspection time, CDW performed a visual inspection of the interior and exterior portions of the building. After identifying suspect materials, CDW collected samples to be analyzed for LBP. No suspect ACM or PCBs were identified in bridge components during this time.

## **3.0 GENERAL SITE CONDITIONS**

The site is located along Route 110 (King Street) in Littleton, Massachusetts. The site is surrounded by a residential living facility to the west, Littleton High School to the northeast and single-family home to the east. The building has operated as a musical teaching and performance venue since the early 1990’s. The primarily wood frame building includes stone and masonry construction by the previous owner of the property. Prior to being operated as a musical venue the building and property was primarily used as farm and agricultural land.

Due to the Site being a railroad right-of-way, there are no assessor parcel numbers assigned to the Site. The Site is located on the Ayer Geological Survey (USGS) Quadrangle Map. The approximate center of the Site is located at the following coordinates and elevation:

<b>Universal Transverse Mercator (UTM) Zone 19 Coordinates</b>	
4712734.12	UTM Y (Meters)
293978.17	UTM X (Meters)
<b>Latitude/Longitude</b>	
42.539453	Latitude (North)
-71.509677	Longitude (West)
<b>Elevation of the Bridge</b>	
233	Feet above sea level

## 4.0 ASBESTOS SURVEY

### 4.1 Methods

The USEPA and Massachusetts Department of Environmental Protection (MassDEP) are responsible for developing and enforcing regulations necessary to protect the public from airborne contaminants that are known to be hazardous to human health. They regulate ACM associated with renovation, demolition, and asbestos abatement projects via the National Emissions Standard for Hazardous Air Pollutants (NESHAP) Title 40 CFR Part 61 regulation. These regulations require that buildings be inspected for ACM prior to renovation/demolition projects. They stipulate that all friable ACM as well as non-friable ACM that are in poor condition or will be made friable by renovation or demolition activity be removed or otherwise appropriately abated before they are disturbed.

The investigative work for the asbestos survey included conducting a visual inspection of physically accessible areas of the structure, reviewing plans and observe any vapor barriers, as well as viewing the roof for suspect materials. Once the inspection was completed, the building components were categorized into homogeneous areas. These homogeneous areas included: surfacing materials, thermal system insulation, and miscellaneous materials. CDW collected bulk samples of different homogeneous suspect materials for asbestos analysis. The bulk samples were delivered under chain of custody to Asbestos Identification Laboratory, Inc. (AIL) of Woburn, Massachusetts, and analyzed utilizing Polarized Light Microscopy (PLM) in accordance with the requirements of 40 CFR Part 763, Subpart F. Samples analyzed to contain greater than 1% asbestos are to be treated as ACM as defined by the USEPA and MassDEP. A positive stop method was used – if one sample in a homogeneous group is positive then additional samples of the same material are not analyzed. The asbestos analytical reports are provided in Appendix A.

## 4.2 Findings

Findings of the ACM sampling are presented in the below table:

Field ID / Laboratory ID	Description	Location	Result
1A, 1B, 1C 647358,647359,647360	Dried Mastic	Basement	ND
2A, 2B, 2C 647361,647362,647363	Tan Glue	Basement Carpet	ND
3A, 3B, 3C 647364,647365,647366	1x1 Acoustic Tile	Through-out Building	ND
3D, 3E, 3F,3G 647367,6476368,647369,647370	1x1 Acoustic Tile	Through-out Building	ND
4A, 4B, 4C 647371,647372,647373	Ceiling Tile (2x2)	Basement	ND
5A, 5B, 5C 647374,647375,647376	2x3 Ceiling Tile Pindot	Basement	ND
6A, 6B, 6C 647377,647378,647379	Gray Sheetrock	Basement	ND
7A,7B,7C 647380,647381,647382	Gray Wallboard	Basement	ND
8A,8B,8C 647383,647384,647385	Brown Cove Molding	Basement	ND
9A, 9B, 9C 647386,647387,647388	tan Cove Mastic	Basement	ND
10A, 10B, 10C 647389,647390,647391	Brown Lobby Tile	Lobby Floor Entry	ND
11A, 11B, 11C 647392,647393,647394	Gray Rm 101 Tile	1 <sup>st</sup> Floor	ND
12A, 12B, 12C 647395,647396,647397	White Joint Compound	Music Hall	ND
13A,13B,13C 647398,647399,647400	White Joint Compound	1 <sup>st</sup> Floor	ND
14A,14B,14C 647401,647402,647403	White Joint Compound	2 <sup>nd</sup> Floor	ND
15A, 15B, 15C 647404,647405,647406	Brown Cove Molding	1 <sup>st</sup> Floor	ND
16A, 16B, 16C 647407,647408,647409	Tan Cove Mastic	1 <sup>st</sup> Floor	ND
17A, 17B, 17C 647410,647411,647412	Brown Cove Molding	2 <sup>nd</sup> Floor	ND
18A, 18B, 18C 647413,647414,647415	Tan Cove Mastic	2 <sup>nd</sup> Floor	ND
19A,19B,19C 647416,647417,647418	Cove Molding	Stairwells	ND
20A, 20B, 20C	Tan cove Mastic	Stairwells	ND

Field ID / Laboratory ID	Description	Location	Result
647419,647420,647421			
21A, 21B, 21C	Gray 2x2 Ceiling Tile	1 <sup>st</sup> Floor	ND
647422,647423,647424			
22A, 22B, 22C	Gray Wall Board	1 <sup>st</sup> Floor	ND
647425,647426,647427			
23A, 23B, 23C	Gray Wall Board	2 <sup>nd</sup> Floor	ND
647428,647429,647430			
24A, 24B, 24C	Blow in Insulation	Attic	ND
647431,647432,647433			
25A, 25B, 25C	Tan Carpet Mastic	2 <sup>nd</sup> Floor	ND
647434,647435,647436			
25D,25E,25F,25G	Tan Carpet Mastic	2 <sup>nd</sup> Floor	ND
647437,647438,647439,647440			
26A, 26B, 26C	Bathroom Tile	Through-out	ND
647441,647442,647443			
26D, 26E, 26F, 26G	Bathroom Tile	Through-out	ND
647444,647445,647446,647447			
27A, 27B, 27C	Gray Bathroom Mortar	Through-out	ND
647448,647449,647450			
27D, 27E, 27F, 27G	Gray Bathroom Mortar	Through-out	ND
647451,647452,647453,647454			
28A, 28B, 28C	Gray Leveler	Lobby 1 <sup>st</sup> floor	ND
647455,647456,647457			
29A	White Barrier	Blackman Hall	ND
647458			
30A	Blue Sound Insulation	Blackman Hall	ND
647459			
31A	Brown Vapor Barrier	Main Lobby under hardwood	ND
647460			
32A	Tan Mastic	Room 101 Carpet	ND
647461			
33A	Black Vapor Barrier	Hardwood Lobby Meeting	ND
647462			
34A,34B,34C	Black/Silver Vapor Barrier	Exterior Siding	ND
647463,647464,647465			

The following are the estimated quantities of ACM requiring abatement:

<b>Confirmed ACM Materials Sampled During November 2020 Survey</b>			
<b>Material Description</b>	<b>Sample Location</b>	<b>Est. Approximate Quantity</b>	<b>Units</b>
None	None	0	N/A

LF=Linear Feet

### 4.3 Other Observations

Other observations during CDW's survey include:

- CDW observed a raised concrete foundation surrounded by riprap, concrete block, and ballast materials. Due to the presence of these structural support materials, no excavation below grade was accomplished to check for foundation mastic or coatings.
- The roof area was inaccessible during the survey process. CDW assumes that it is the same concrete slab/decking material throughout as is visible from the ground level.

### 4.4 Regulatory Requirements

ACM that will be impacted by renovation or demolition work must be removed before they are disturbed. This work must be conducted in accordance with a project design as prepared by a licensed Asbestos Abatement Project Designer. This report is not intended for use as an abatement design. Prior to disturbance, the ACM identified must be abated by a Commonwealth of Massachusetts-licensed asbestos abatement contractor following all federal, state & local regulations governing asbestos abatement. A copy of the asbestos Waste Shipment record must be received within 30 days of removal from the Site. Asbestos air quality sampling must be conducted under USEPA regulations following asbestos abatement and prior to re-occupancy of the spaces.

During the course of renovation or demolition work, it is possible that additional suspect ACM will be encountered. Contractors should be apprised to conduct any such work in a controlled manner. If suspect materials that have not been sampled are encountered, they should be assumed to contain asbestos, unless appropriate sampling and analysis indicates otherwise.

## 5.0 POLYCHLORINATED BIPHENYLS (PCBS)

### 5.1 Methods

Polychlorinated biphenyls (PCBs) are a chemical component of many dielectric fluids, heat transfer fluids, hydraulic fluids, lubricating oils, paints, or coatings manufactured prior to 1979. During this survey, a visual inspection was performed throughout the grounds to identify any suspect material that may contain PCBs.

After the visual inspection CDW identified the exterior door and window caulking materials as suspect to contain PCBs. CDW did not identify any caulking related materials that were exposed in order to collect a specific sample. As a result no samples were submitted to a laboratory for PCB analysis.

## 5.2 Findings

No samples were submitted for laboratory analysis

## 5.3 Regulatory Requirements

Should any additional suspect materials be encountered during the demolition process CDW recommends that they be appropriately sampled and handled following all local and federal regulations.

Any building materials (concrete) contaminated by the leaching or migrating of the PCB containing product into the substate shall be disposed of as remediation waste to less than 1 part per million as per the regulations found in Title 40 of the Code of Federal Regulations Part 761 (40 CFR Part 761.61 (b)), or removed as a whole unit as PCB bulk product waste.

Currently no material during the November 2020 site visit was identified as potentially containing PCB related materials. CDW recommends that any exposed caulking materials during any potential renovation be collected and tested for potential PCB related compounds.

## 6.0 LEAD-BASED PAINT

### 6.1 Methods

CDW performed a visual inspection of painted surfaces. CDW collected samples from different color paints on various types of building component substrates and draw bridge components. Samples were submitted to Contest Laboratories in East Longmeadow, Massachusetts for analysis via atomic absorption spectrometry (AAS). The lead analytical reports are provided in Appendix C. Figure 2 shows the approximate sample locations.

### 6.2 Findings

The results of the laboratory analysis are provided in the below table:

Field ID / Laboratory ID	Description	Result (%weight)
<b>TOWER BUILDING</b>		
LBP-1	Painted steel beams	ND (<.0025)
LBP-2	Tan paint on door jams	ND (<.0025)

PPM = Parts Per Million

The USEPA defines LBP as any paint or surface coating that contains lead equal to exceeding one milligram per square centimeter (1.0 mg/cm<sup>2</sup>), which represents 5,000 PPM or 0.5% by weight. The

OSHA lead-in-construction standard defines lead containing paint (LCP) as a paint or coating containing any detectable level of lead.

The analytical results from the limited survey shows that most of the painted bridge components exceeded the EPA limits and contain lead. None of the samples exceeded this threshold for lead based paint.

Other paint colors located along the interior and exterior surfaces were not tested since paint cans were observed inside the basement area listing the paints as water based latex paints. The paints were directly observed as having been applied to various areas as general up-keep and maintenance of the facility.

### **6.3 Regulatory Requirements**

- Removal of the LBP is not required. However, in accordance with the EPA Lead Renovation, Repair, and Painting (RRP) Rule 40 CFR 745, workers, students, visitors, and the public must be protected from lead dust generated during the demolition of LBP or LCP coated surfaces.
- Components identified to contain the presence of lead should not be disturbed in an uncontrolled manner. Disturbance of these materials should only be done by properly trained personnel in a controlled and documented manner to allow for the safety of the workers, bystanders, and collection and disposal of waste materials.
- In addition to the worker protection requirements stipulated by OSHA, MassDEP and the USEPA regulate the disposal of wastes that are potentially hazardous. Such wastes may include paint chips and residue generated during abatement or repainting work, or whole components, such as wood windows, doors, and trim that are coated with LBP and that are disposed of as the result of renovation or demolition work. To determine the required method for disposing of permeable items coated with LBP, the MassDEP and the USEPA require representative sampling of the debris to determine the quantity of lead that would be expected to leach into the environment if the debris were disposed of in a landfill. The representative sample(s) must be analyzed by TCLP to determine the proper disposal method.

### **7.0 OTHER HAZARDOUS MATERIALS (OHM) SURVEY**

On November 12, 2020 CDW visually inspected the Site building for universal, special and hazardous wastes associated with building materials. These included but were not limited to the following:

- Mercury-containing devices (fluorescent light tubes, thermostats, gauges, etc.);
- PCB-containing articles, equipment and devices (light ballasts, electrical switches, etc.);
- Chlorofluorocarbon (CFC)-containing equipment (refrigerants, air conditioners/HVAC equipment, water bubblers, etc.)
- Tritium-containing devices (Exit signs); and
- Lead-Acid batteries (emergency lights, etc.).

The visual survey for hazardous materials identified mercury-containing light tubes, di (2-ethylhexyl)

phthalate (DEHP)-containing light ballasts, mercury containing thermostats and switches, lead and tritium batteries, refrigerants and other hazardous materials. No hazardous materials sampling or analysis was conducted as part of this preliminary survey. A list of hazardous materials identified are included in the below table.

Material Description	Location	Est. Approximate Quantity	Units
Compact Fluorescent Bulbs	Throughout	18	EA
Fluorescent Bulbs (Mercury)	Throughout	220	Tubes
Ballasts/Emergency Lights	Throughout	12	Each
Exit Signs (Tritium Battery)	Throughout	17	EA
Smoke/Heat Detector	Throughout	12	EA
Fire Extinguishers	Throughout	6	EA
Electrical Ballast (lights)	Throughout	110	EA

Prior to building renovation or demolition, light tubes, ballasts, compact florescent bulbs, lead and/or tritium batteries, thermostats and switches will require proper handling, removal, transportation and off-site recycling/reclamation or disposal in accordance with state and federal regulations.

### Radon System

A basement radon system was observed in operation in at least two locations within the basement. It was unclear during the site visit and sampling event if the “radon” system is in operation as a result of detected radon or the result of other environmental factors. A gas station was observed approximately 400 feet to the southwest. It is unknown if a release at the gas station is the result of the “radon” fan installation. It is recommended that the radon system be tested for both radon gases and other potential volatile organic compounds relative to site proximity to the gas station. The recommended testing is to ensure that no vapor migration is impacting the basement portion of the building.

## 8.0 LIMITATIONS

The conclusions are limited to the information available at the time of the field survey and the scope of services, as defined. No subsurface soil or groundwater sampling and analysis was performed. Where access to portions of the Site or to structures on the site was unavailable or limited, CDW renders no opinion as to the presence of hazardous material or the presence of indirect evidence related to hazardous material in that portion of the site or structure. This report cannot be solely relied upon for renovation or demolition. The sampling performed forms the basis for conclusions expressed and areas inaccessible for testing limits those conclusions. No other conclusions, interpretations or

recommendations are contained or implied in this report other than those expressed. While CDW followed industry standards during the inspection, we do not warrant that all suspect hazardous building materials were identified in or on the buildings and shall not be held liable related to future abatement costs related to hazardous materials that are either not discovered or not appropriately characterized. This is due in part to inherent problems with every building inspection, such as, but not limited to:

- Seemingly homogeneous materials that are not in fact homogeneous;
- Seemingly representative locations that are not in fact representative;
- Layered materials that are not uniformly present or are isolated;
- Materials that are present and accessible but were not considered to be hazardous,
- Materials that are present in an isolated and limited quantity; and
- Material that is present in locations that are unsafe or otherwise difficult to access.

Client acknowledges that CDW's inspection is limited and all hazardous materials may only become apparent during future demolition. Additional hazardous materials or materials suspected of being hazardous should be assumed to be hazardous unless appropriate evaluation or sampling and analysis demonstrate otherwise. No other use of this report is warranted without the written consent of CDW Consultants, Inc.

CDW appreciates the opportunity to provide services to you on this project.

Should you have any questions please do not hesitate to contact us at (508) 875-2657 or via email.

Sincerely,



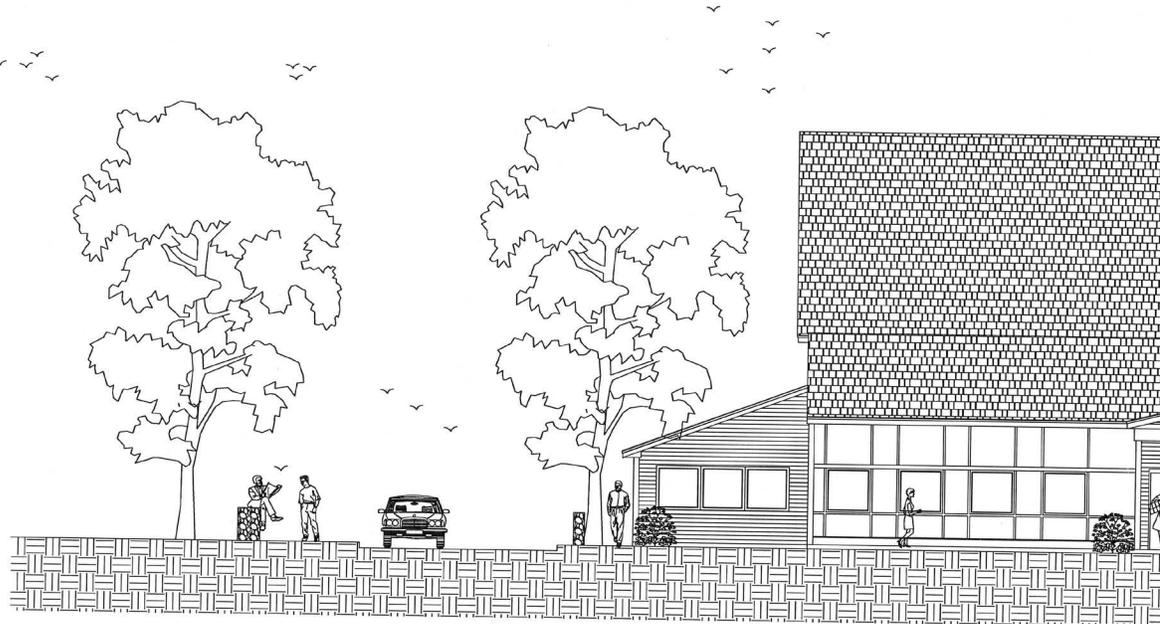
Alan Sundquist, Project Geologist  
Manager of Field Services



## V. Exhibits

# INDIAN HILL M PERFORMA

36 KING  
LITTLETON



CONSTRUCTION  
APRIL 22  
REVISED MA

MULLANEY CORPORATION  
36 SCHOOL STREET  
LEOMINSTER, MA 01453  
978-537-8900

McKENZIE ENGINE  
305 WHITNEY  
LEOMINSTER,  
978-537-

2000 Progress Drawing Set

# MUSIC CENTER DANCE HALL

STREET  
, MA 01460



DOCUMENTS  
2, 1998  
AY 31, 2000

ERING CO., INC.  
Y STREET  
, MA 01453  
8210

CONWAY ENGINEERING, INC.  
P.O. BOX 688  
BROOKLINE, NH 03033  
603-673-6105

to scale. Refer to original drawing set.

N 19°-17'-58" E

93.08'

S 19°-17'-58" W

205.79'

Street (Route 2-A) 400.00'

207.02'

Lance J. and Margaret M. Nielsen

PROGRESS

APR 21

PRINT

Existing stockade fence w/ Azaleas between fence and retaining wall

199.00'

N 14°-07'-20" E

PROP. EMERGENCY ACCESS GATE

PROP. EMERGENCY ACCESS GATE

LANDSCAPE AREA

PROPOSED PERFORMANCE HALL

Covered Porch

Covered Porch

King Street

N 74°-25'-07" W

157.90'

234

235

236

237

238

239

240

241

242

243

244

S 14°-42'-11" W

Francis W. and Carol A. Gravelle

Town of

Littleton Planning Board
DATE OF APPROVAL
DATE OF ENDORSEMENT
2000 Progress Drawing Set
94   LLB Architects



Town of Littleton School Department

Received  
Thursday 4/23/98  
**MULLANEY CORPORATION**  
General Contractors  
Construction Managers

PROGRESS  
APR 21  
PRINT

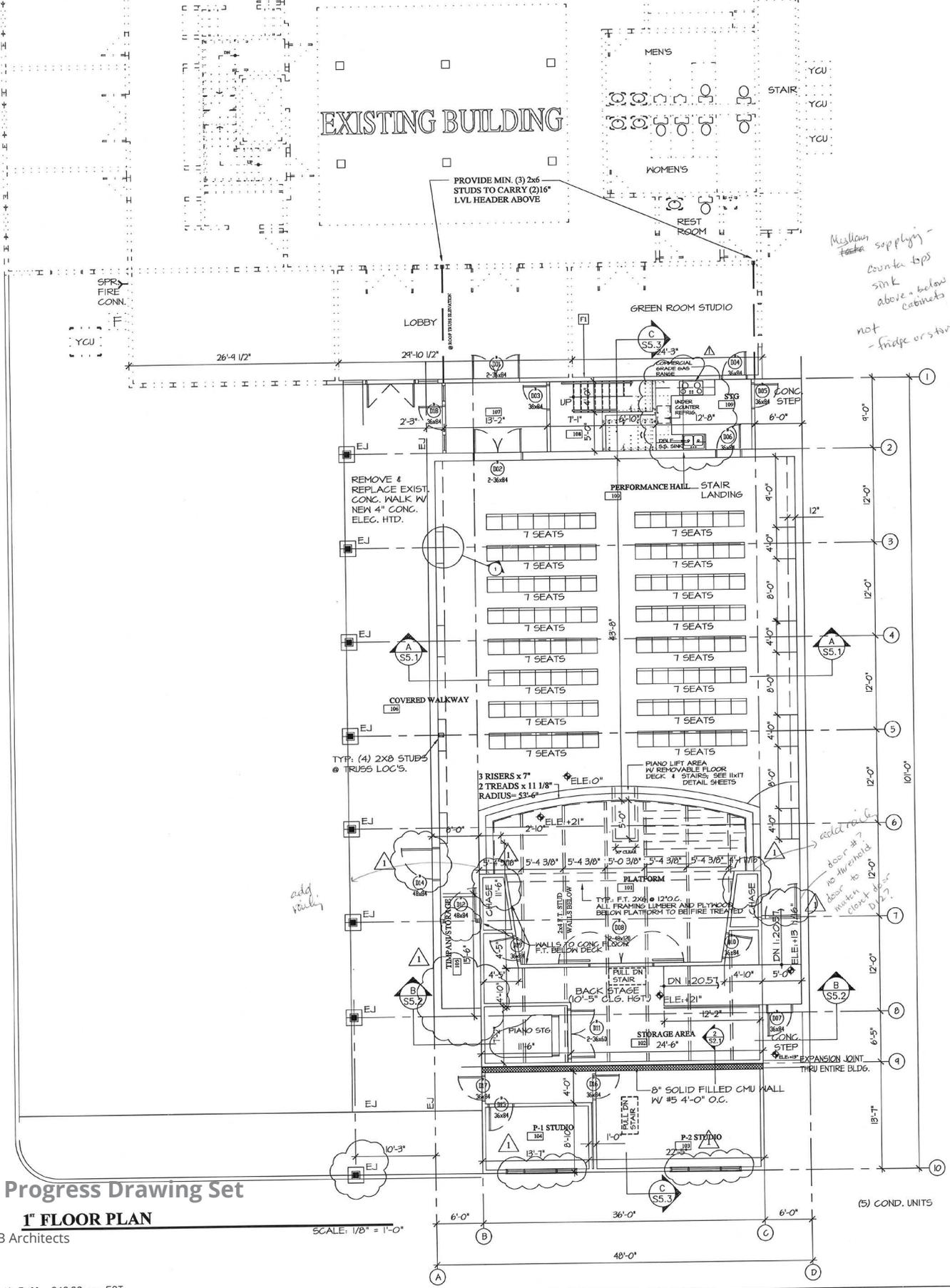
Littleton School Department

RECEIVED  
APR 22 1998  
MULLANEY CORP.

SITE PLAN OF LAND IN  
**Littleton, Mass.**  
PREPARED FOR  
**Indian Hill Arts**  
SCALE 1" = 20'  
Drawing not to scale. Refer to original drawing set.  
David L. Ross Associates, Inc.  
CIVIL ENGINEERS  
LAND SURVEYORS  
Indian Hill 36 King St. Existing Conditions Reports  
P.O. BOX  
(TEL. NO. 772-6232) PLAN NO. L-  
JOB NO. 7468

1 of 1

# EXISTING BUILDING



Misthan supply -  
 counter tops  
 sink  
 above + below  
 cabinets  
 not  
 fridge or stove

add railing  
 door #?  
 no threshold  
 make a closet door  
 D-2?

add railing

## 2000 Progress Drawing Set

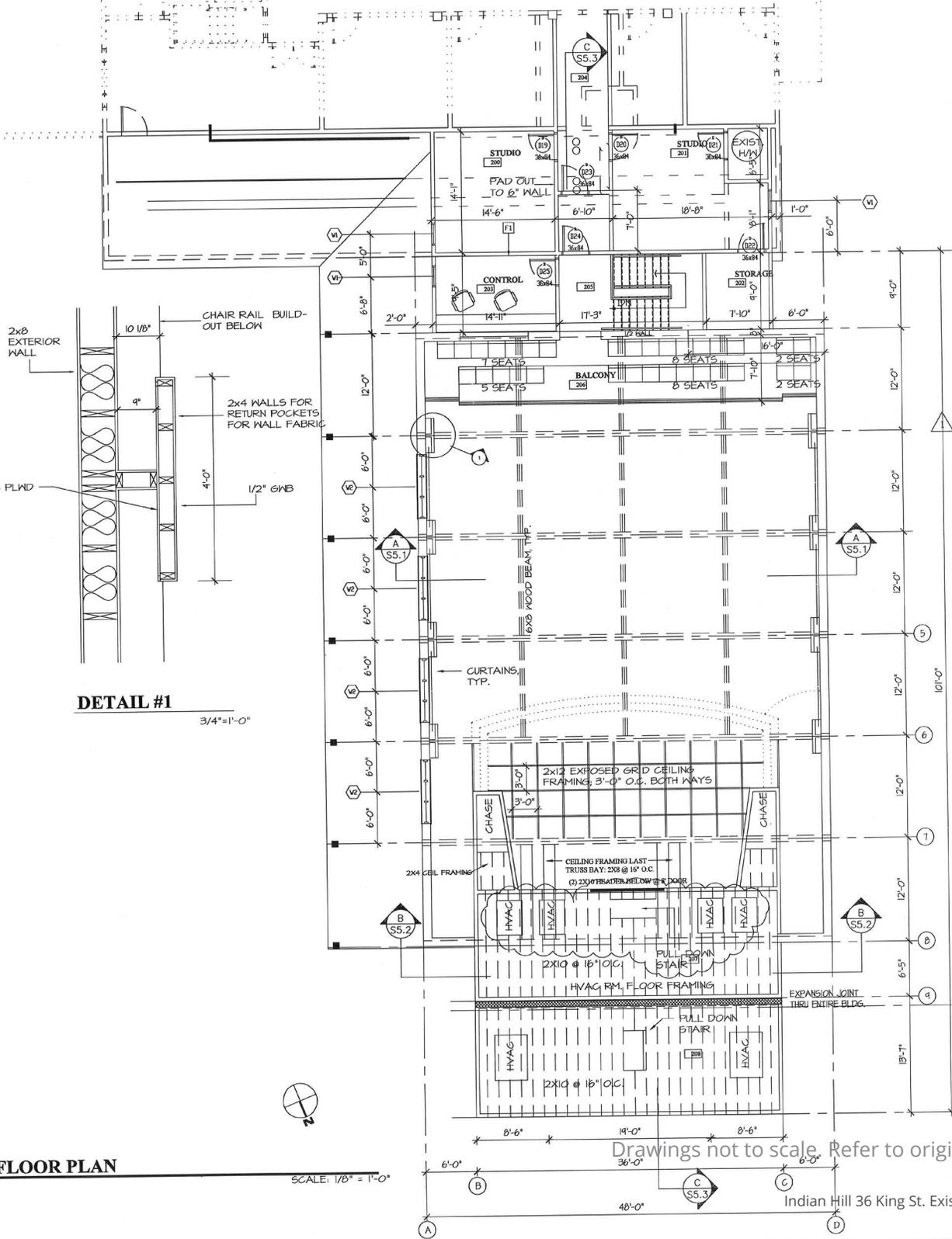
### 1<sup>st</sup> FLOOR PLAN

96 | LLB Architects

SCALE: 1/8" = 1'-0"

(5) COND. UNITS

# EXISTING BUILDING



PROJECT: **INDIAN HILL MUSIC CENTER**  
LITTLETON, MA 01460

PROPOSED 7,232 SF PERFORMANCE HALL  
FIRST & SECOND FLOOR PLANS

REVISIONS	DATE	ISSUE DATE
1	3/17/98 D.D. DWG	
2	4/22/98 BTH	
3	5/31/2000 PNR/BTH	

DATE: 03/12/98  
SCALE: 1/8" = 1'-0"  
DRAWN BY: BTH  
DESIGN BY: PNR/BTH

GENERAL CONTRACTOR:

**MULLANEY CORPORATION**  
General Contractors, Design Build  
Construction Management  
36 School Street, Leominster, MA 01453 (508)537-8960

**MCKENZIE ENGINEERING COMPANY, INC.**  
305 WHITNEY STREET LEOMINSTER, MA 01453  
TEL: 978-537-8210 FAX: 978-660-4147

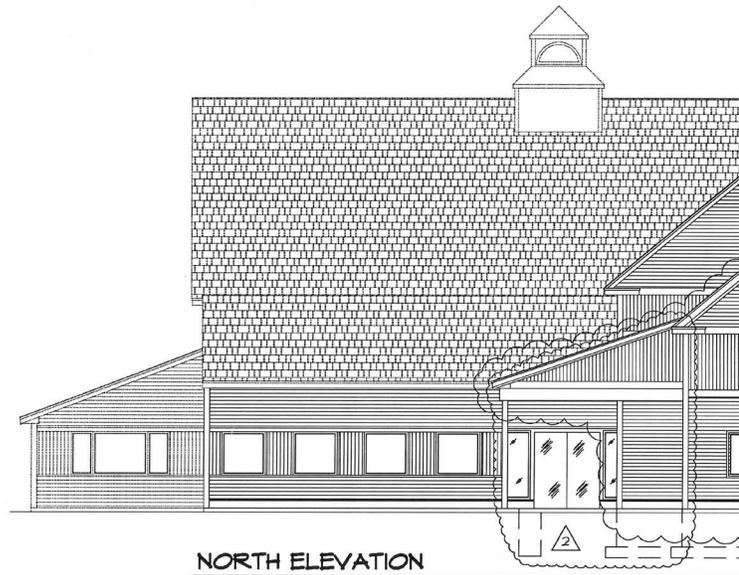
FILE: FLOR.DWG  
JOB# ME-1655

Drawings not to scale. Refer to original drawing set.

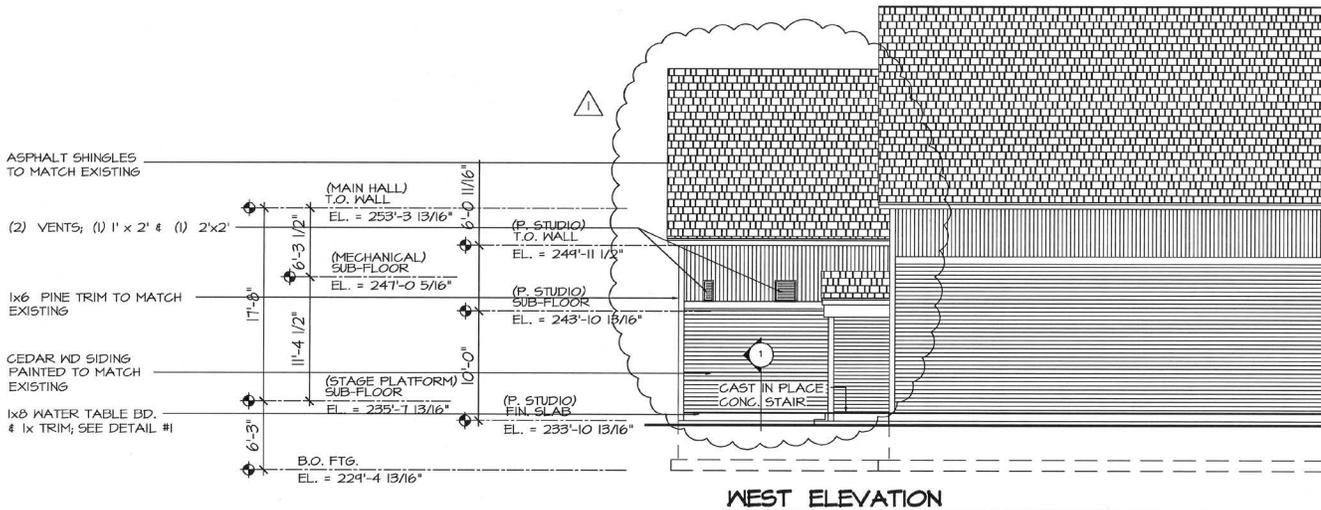
Indian Hill 36 King St. Existing Conditions Report **A1.1**

## 2<sup>ND</sup> FLOOR PLAN

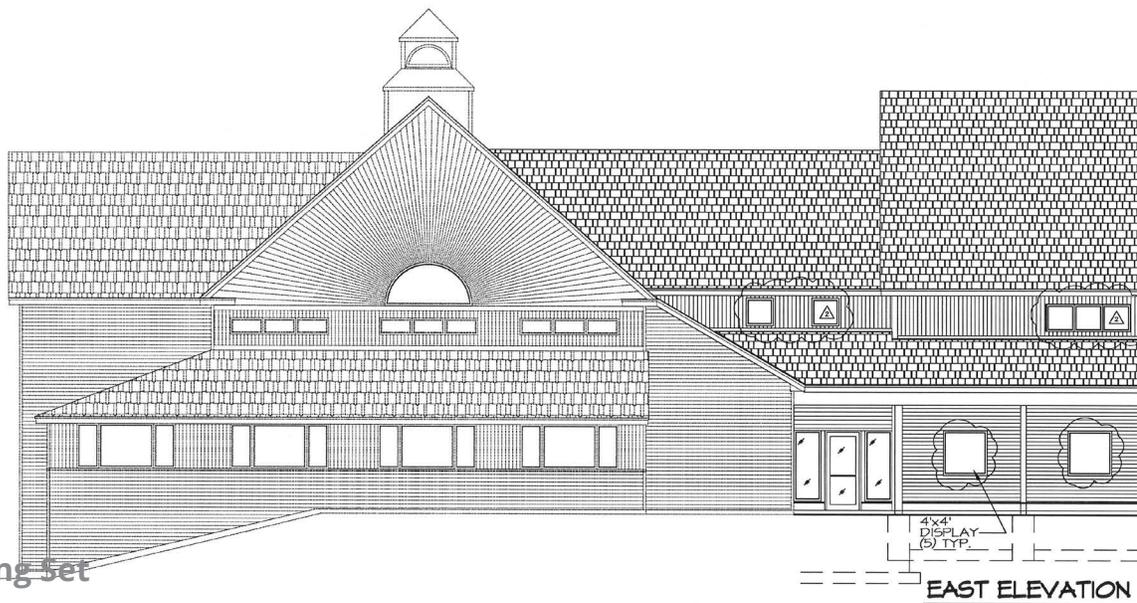
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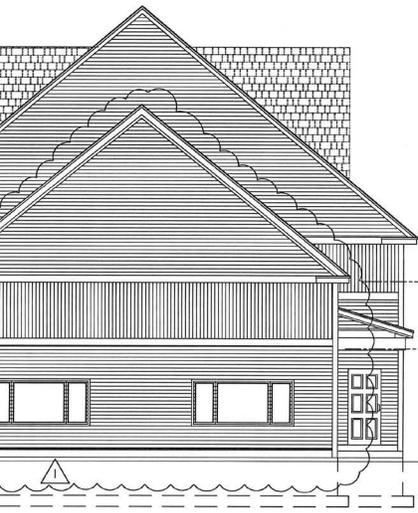
NORTH ELEVATION



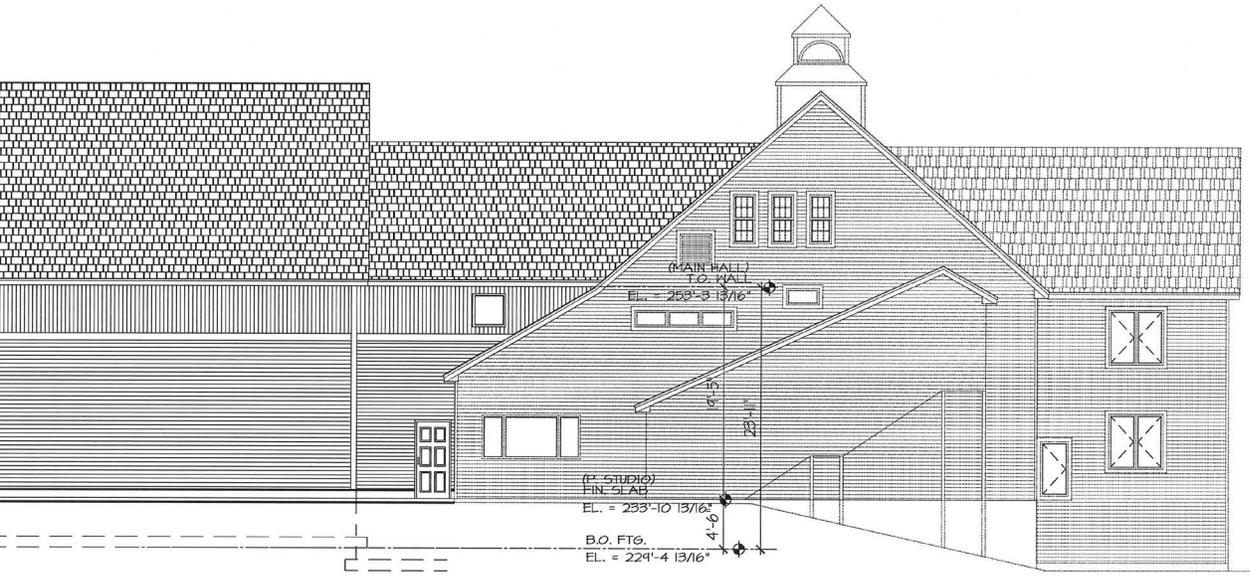
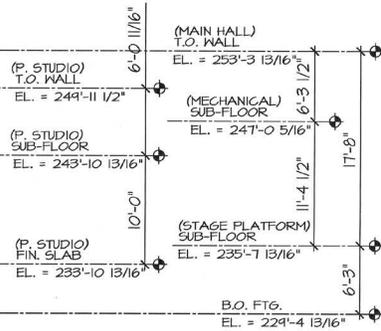
WEST ELEVATION



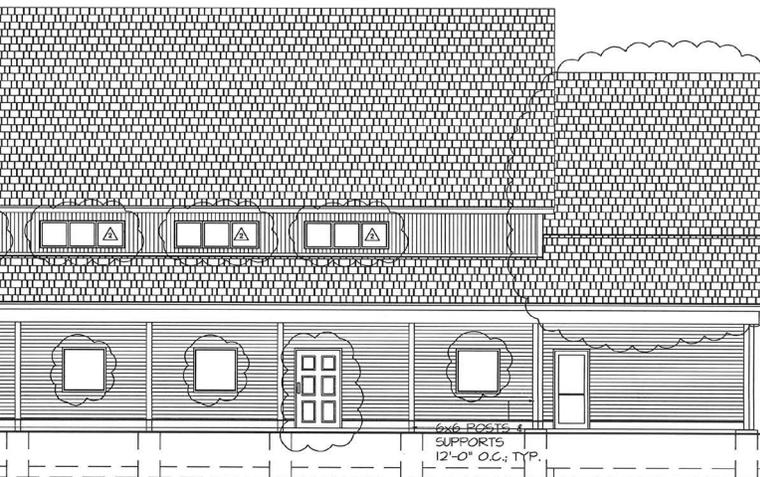
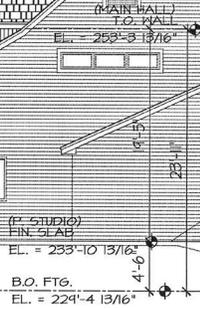
EAST ELEVATION



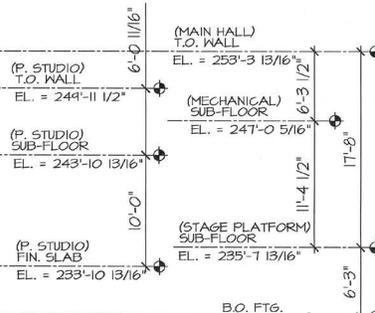
SCALE: 1/8" = 1'-0"



SCALE: 1/8" = 1'-0"



SCALE: 1/8" = 1'-0"



Drawings not to scale. Refer to original drawing set.

PROJECT: INDIAN HILL MUSIC CENTER  
LITTLETON, MA 01460

PROPOSED 1,232 SF PERFORMANCE HALL  
BUILDING ELEVATIONS

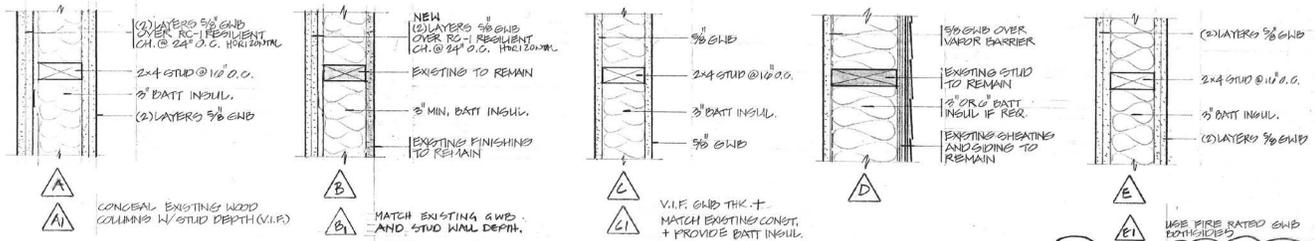
DATE:	3/3/98	REVISIONS	
SCALE:	1/8" = 1'-0"	4/2/2000	
DRAWN BY:	BTH	5/9/2000	
DESIGN BY:	PVR/BTH	7/14/2000	GENERAL

305 WHITNEY STREET  
LEOMINSTER, MA 01453  
TEL: 978-537-8210  
FAX: 978-840-4147

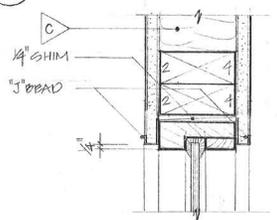
**McKENZIE  
ENGINEERING  
COMPANY, INC.**

FILE:  
JOB#ME-1655

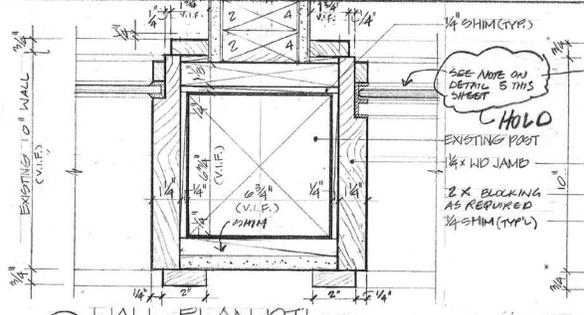
**A2-1**



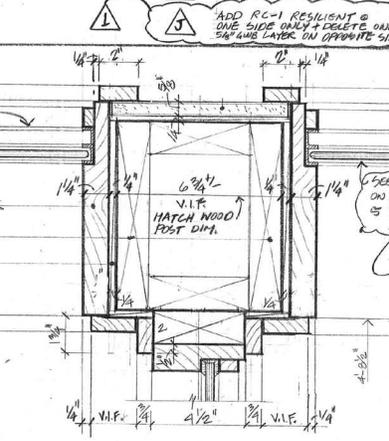
**WALL TYPES**



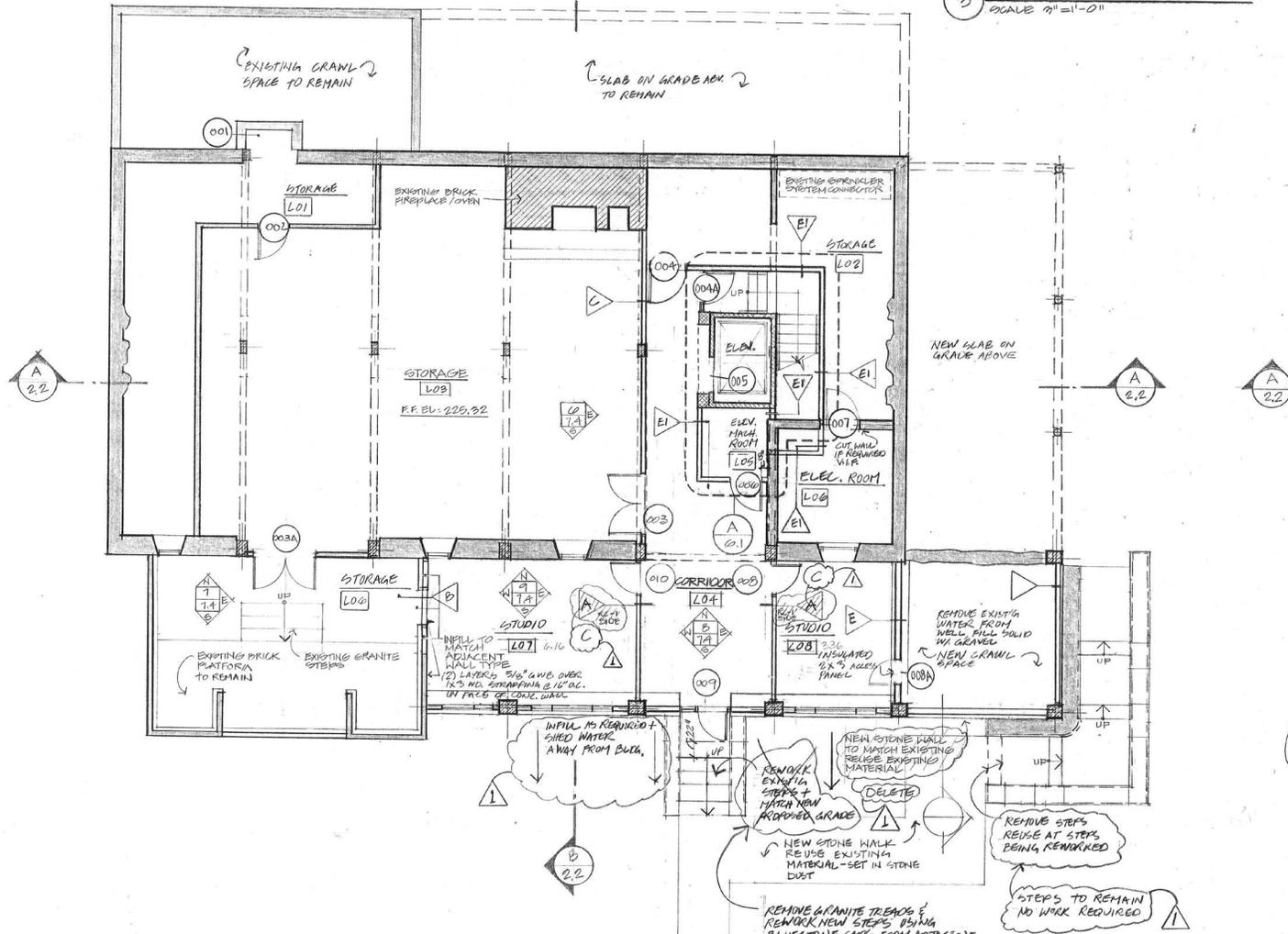
1 WALL PLAN DTL. SCALE 3/4\"/>



2 WALL PLAN DTL. SCALE 3/4\"/>

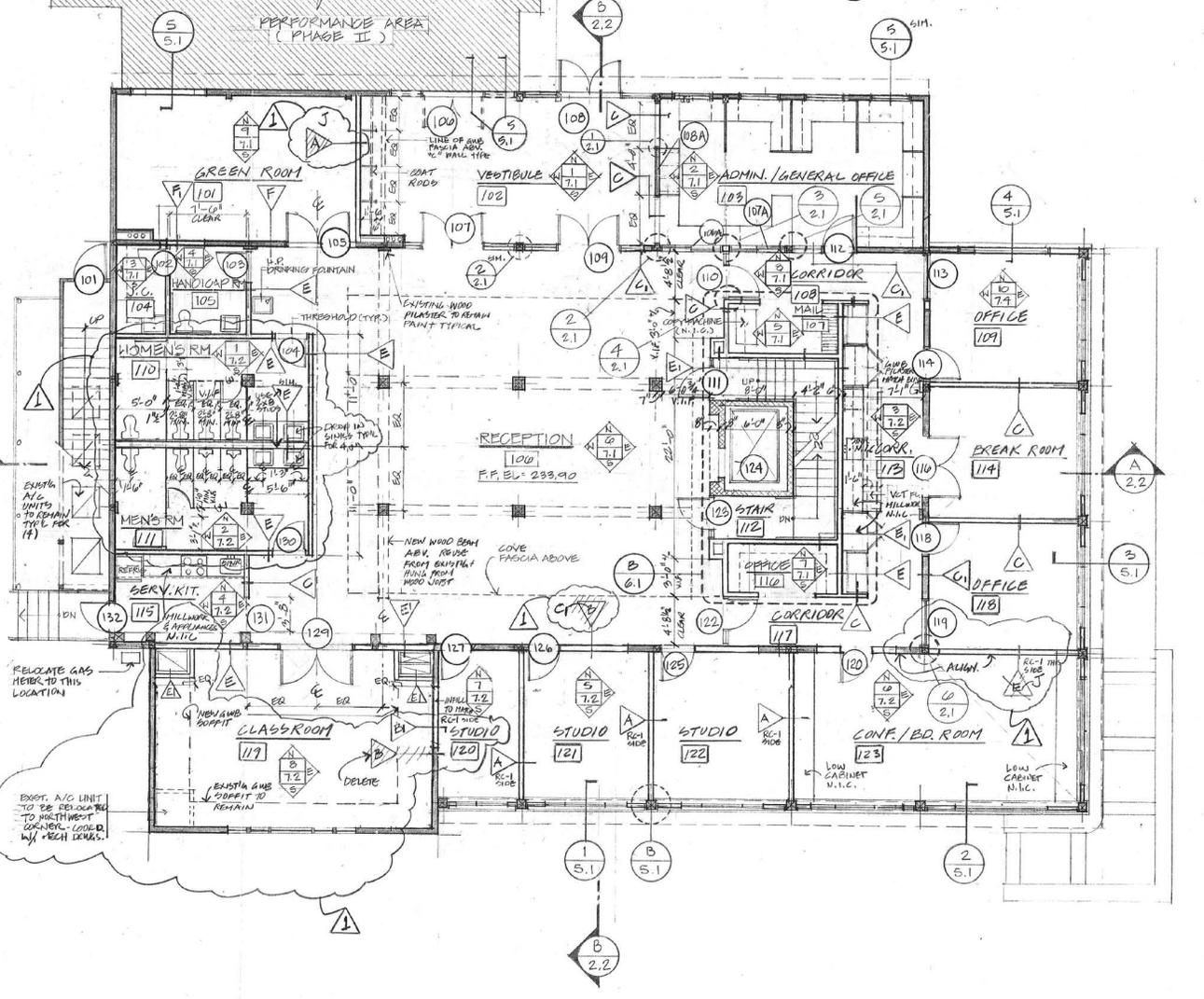
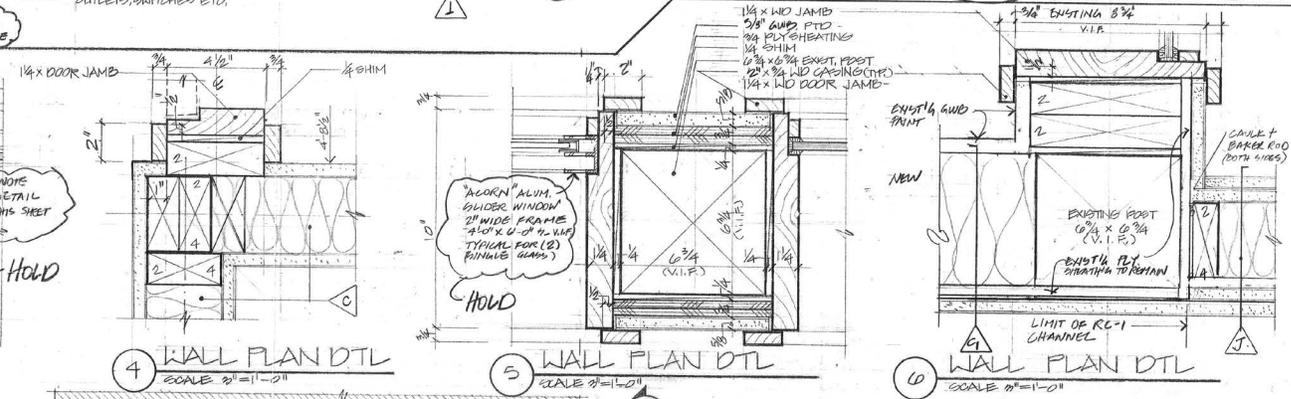
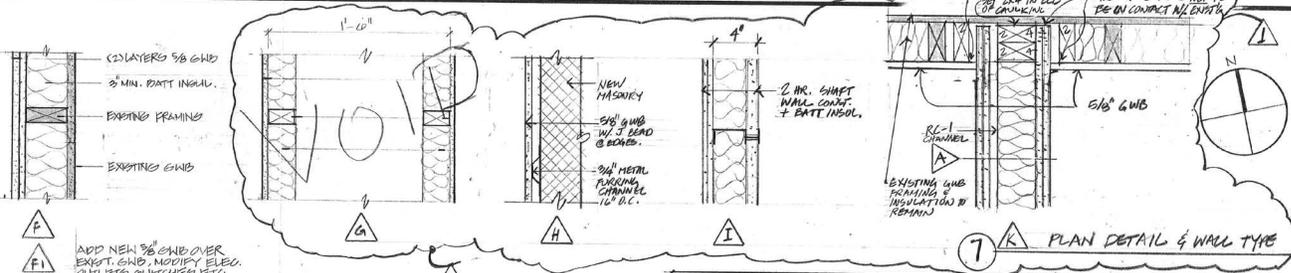


3 WALL PLAN DTL. SCALE 3/4\"/>



**LOWER LEVEL FLOOR PLAN**

REMOVE GRANITE TREADS & REWORK NEW STEPS USING BLUESTONE CAPS FROM ADJACENT ARE - CUT TO FIT. RISERS TO BE CONSTRUCTED FROM EXISTING FIELD STONES AS REQUIRED. TEMPORARILY REMOVE BLUESTONE STAIR SIDE WALL CAPS, RE BUILD NEW STONE WALLS TO REQUIRED HT. V.I.F. REPLACE STONE CAPS + EXTEND STONE CAPS IF REQUIRED.



FIRST FLOOR PLAN

LEGEND  
 EXISTING WALL  
 NEW DRY WALL  
 NEW CMU WALL  
 EXISTING BRICK  
 EXISTING GRANITE  
 POST  
 NEW STONE WALL

**INDIAN HILL ARTS**  
 RENOVATIONS AND ADDITIONS TO  
 36 KINGS ROAD • LITTLETON, MA

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 543 Massachusetts Avenue, West Acton, MA 01720

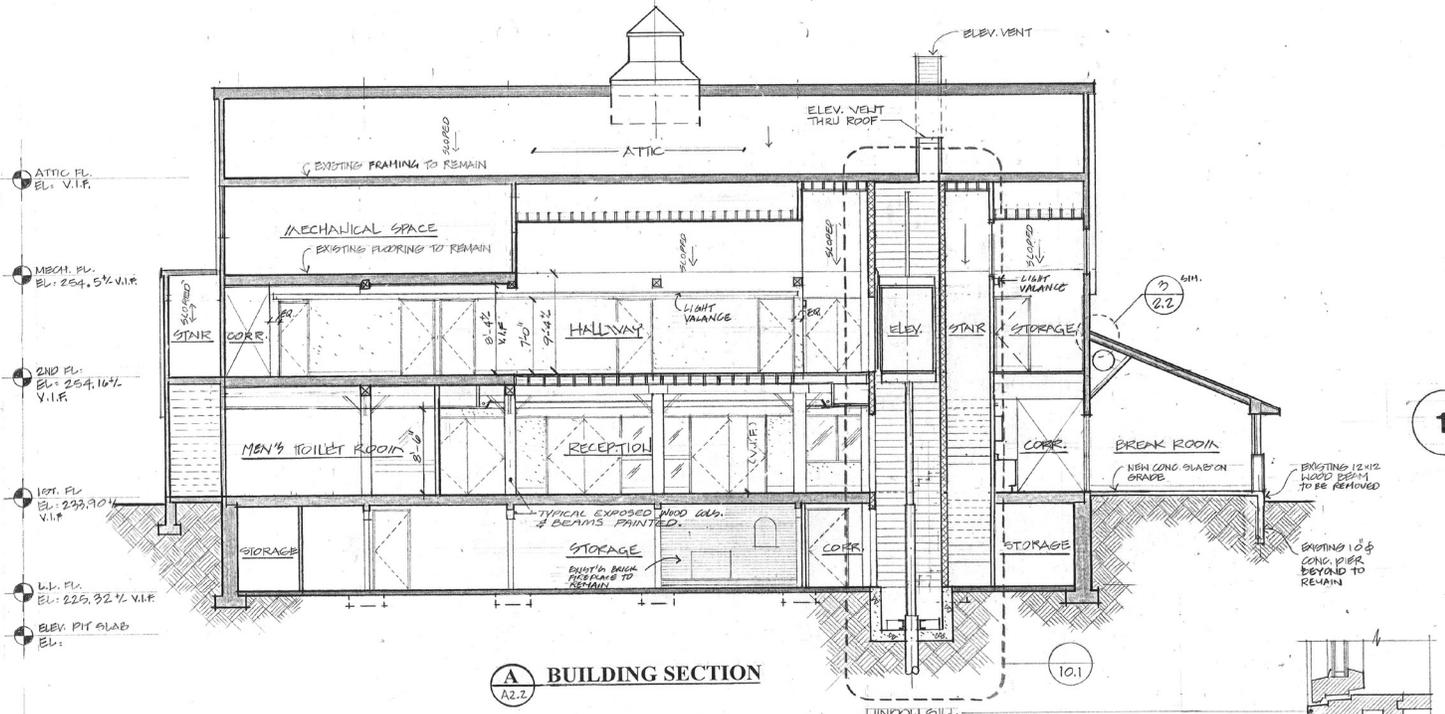
Rev. No.	Date	Description
1		PREPARED TO REFLECT OWNER BUDGET. DATE: 11.6.15

**LOWER LEVEL FLOOR PLAN, FIRST FLOOR PLAN & WALL CONSTRUCTION TYPES**

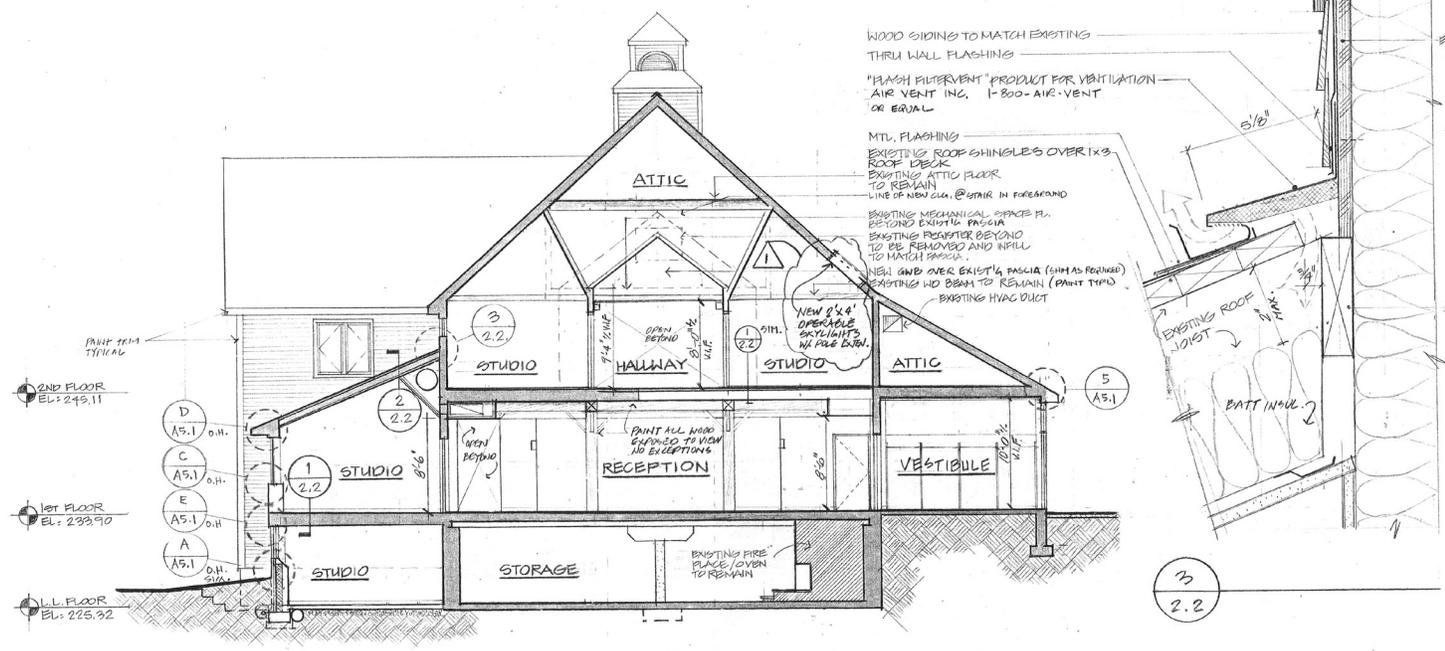
Title: \_\_\_\_\_  
 Job No.: \_\_\_\_\_  
 Drawing No.: \_\_\_\_\_

Date: \_\_\_\_\_  
 Scale: \_\_\_\_\_  
 Drawn: \_\_\_\_\_  
 Checked: \_\_\_\_\_  
 © O.M.R., Inc.

Indian Hill 36 King St. Existing Conditions Report SHEET OF

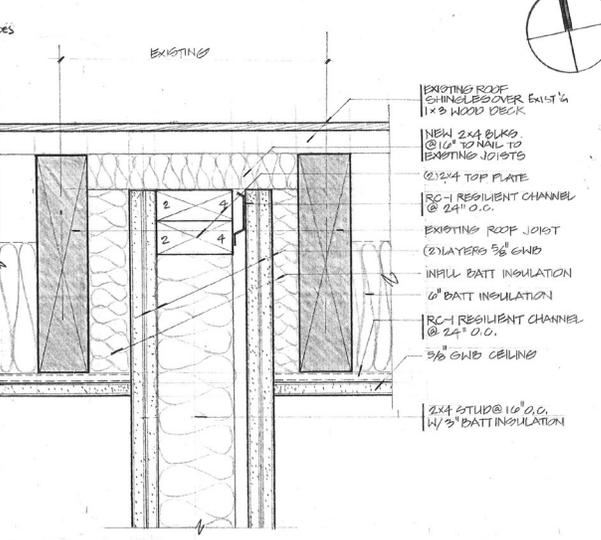
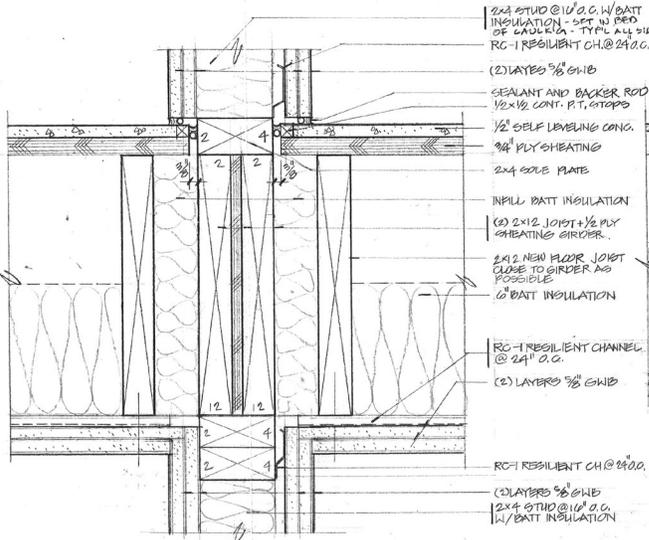


**A BUILDING SECTION**  
A2.2



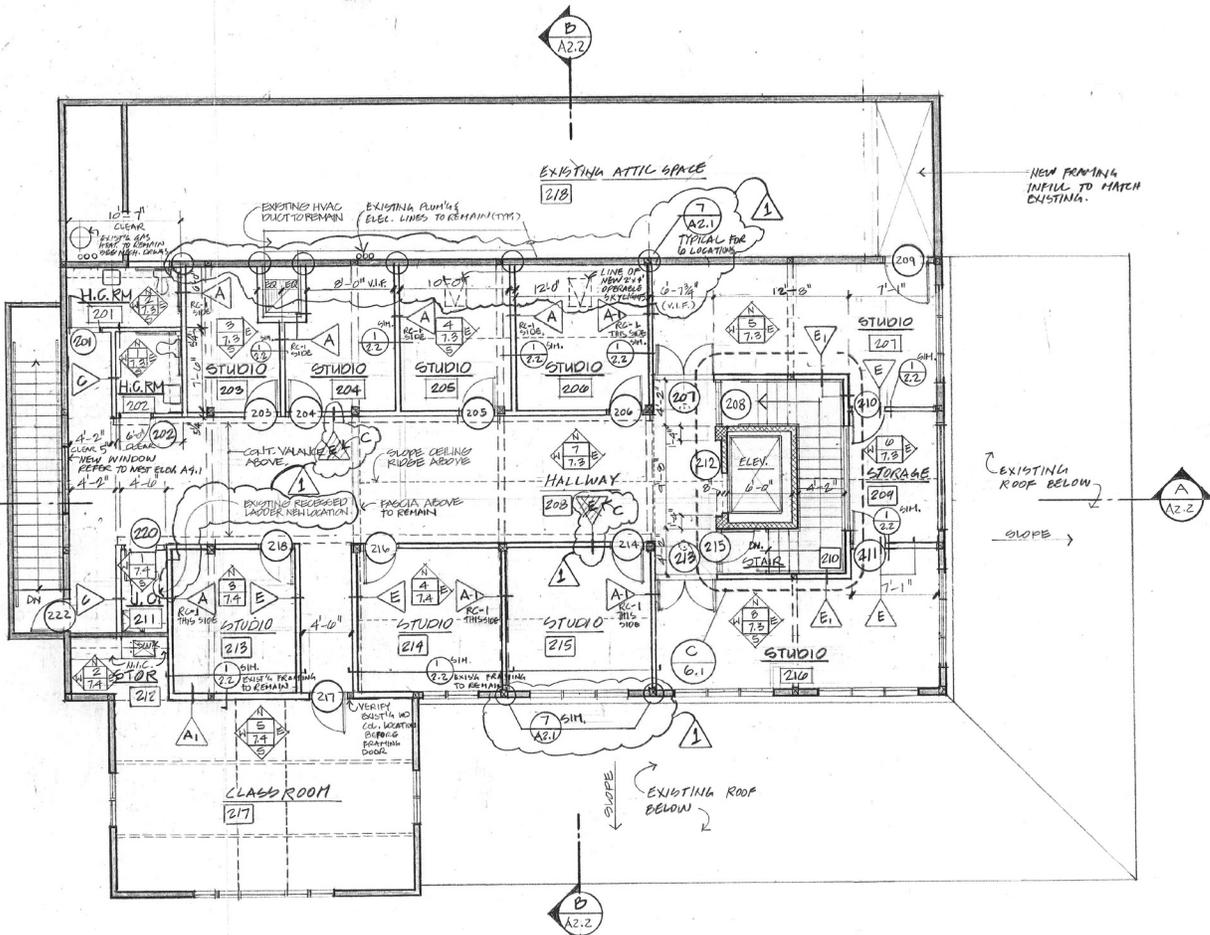
**B BUILDING SECTION**  
A2.2

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 543 Massachusetts Avenue, West Acton, MA 01720



**SECTION DTL**  
 SCALE 3"=1'-0"

**SECTION DTL**  
 SCALE 3"=1'-0"

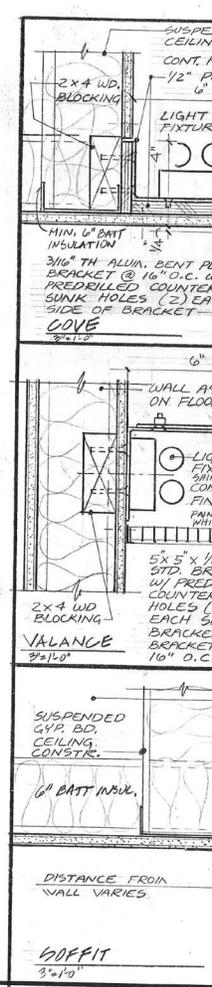
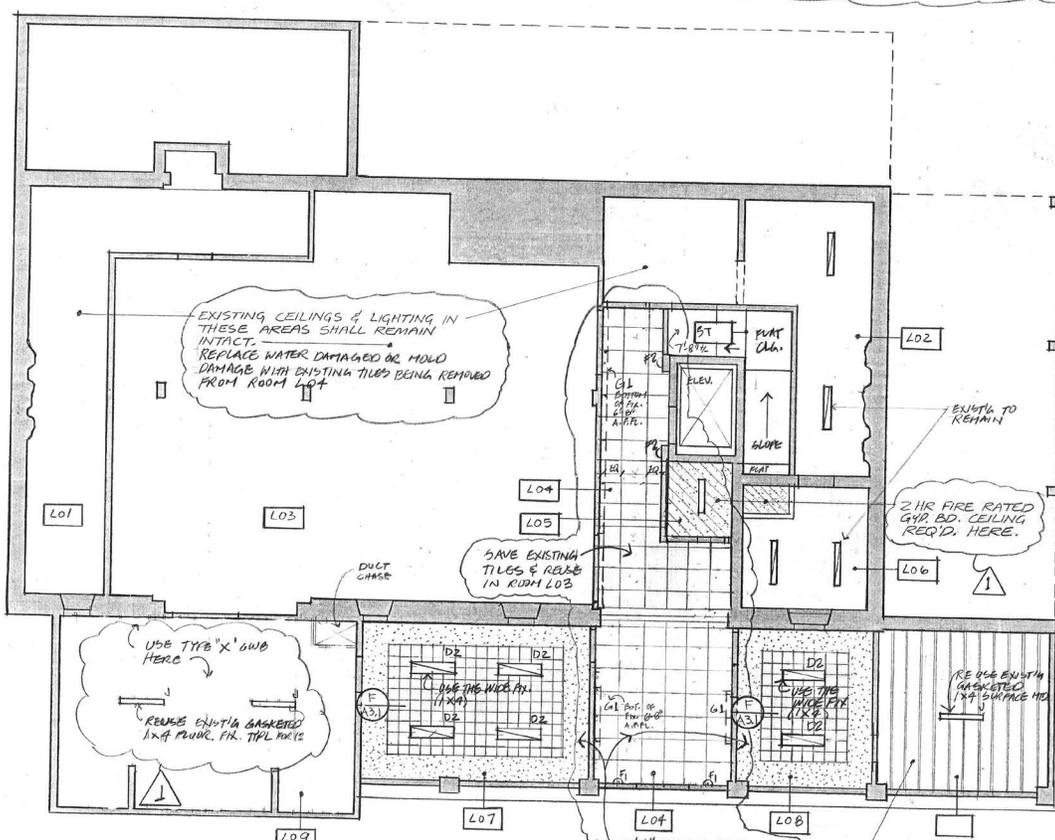
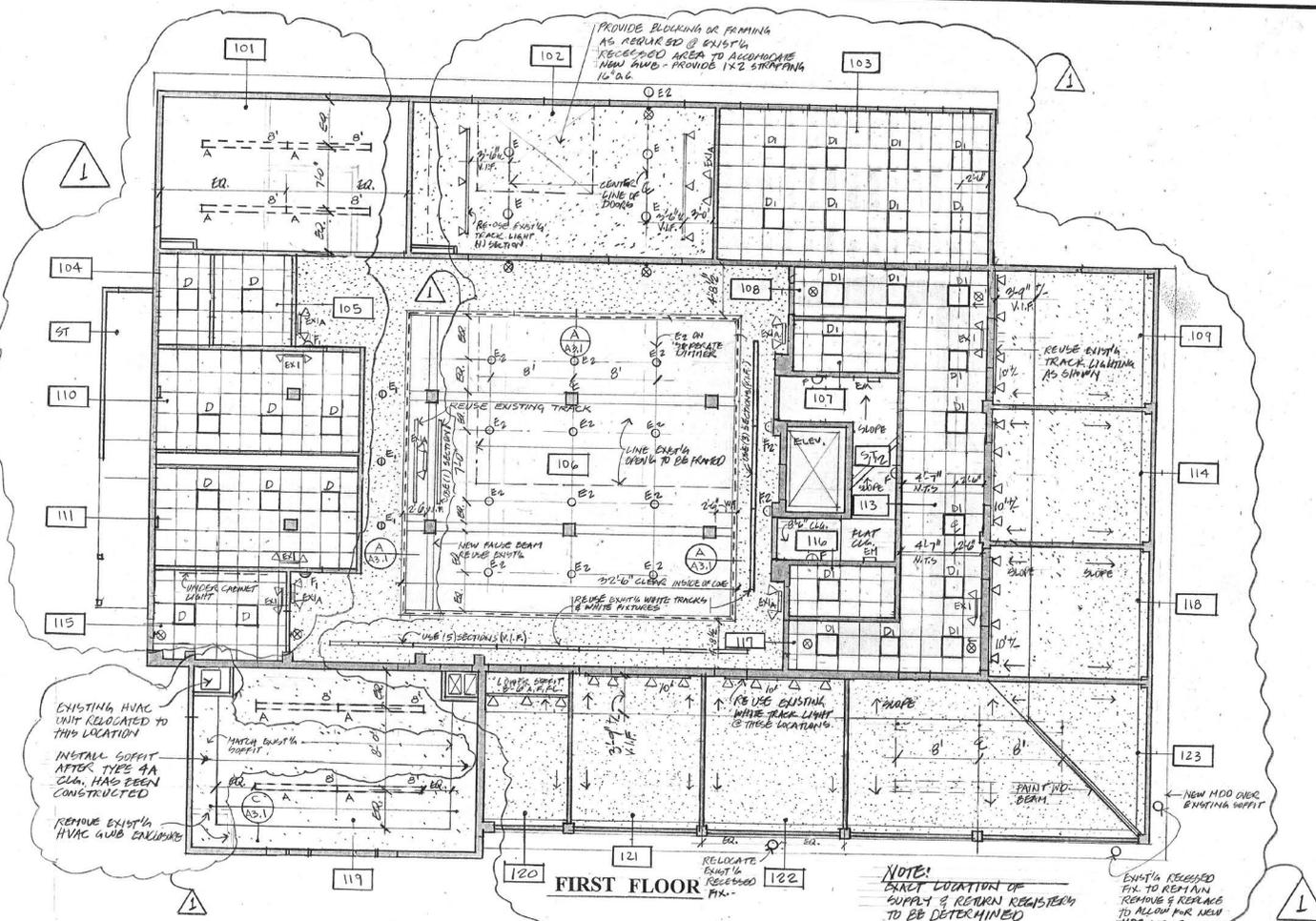


**SECOND FLOOR PLAN**

INDICATED BY DOTTED LINE TO REMAIN  
 INDICATED NEW PARTITIONS  
 INDICATED NEW CMU WALL

Rev. No.	Date	Description
1		REVISED, CHANGES TO REFLECT ATIP BUYER DATED 11.6.15

Title	Second Floor Plan & Building Sections
Job No.	
Date	
Scale	
Drawn	
Checked	



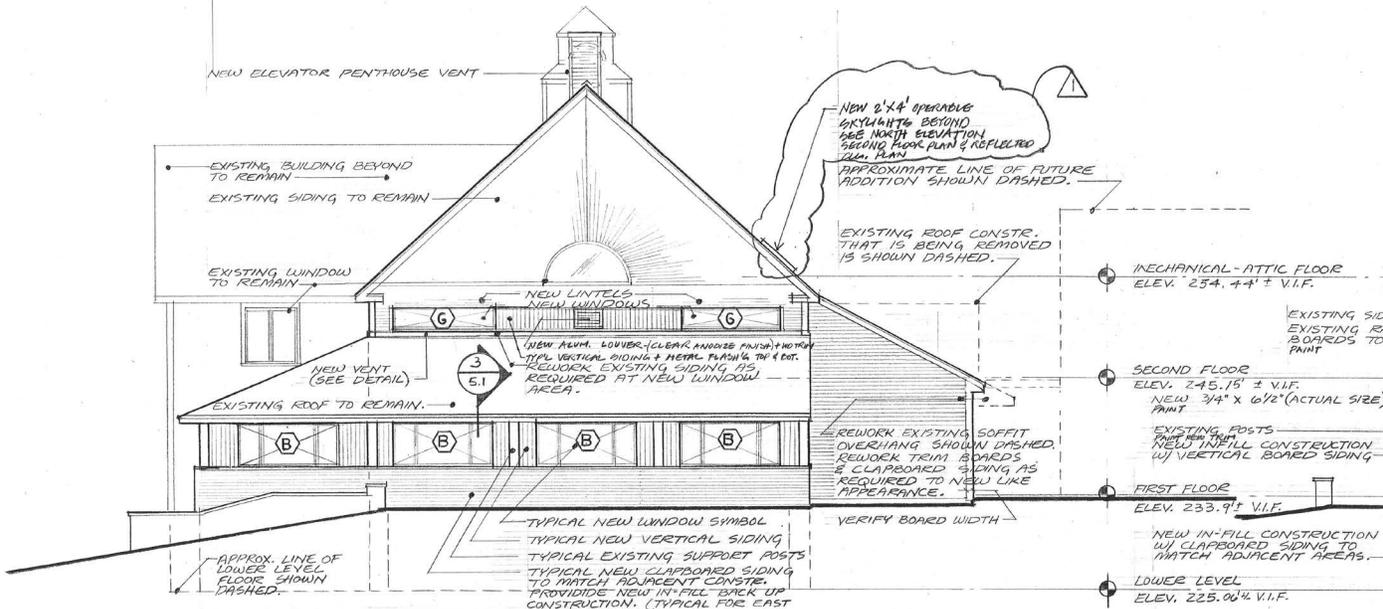
2000 Progress Drawing Set

LOWER LEVEL

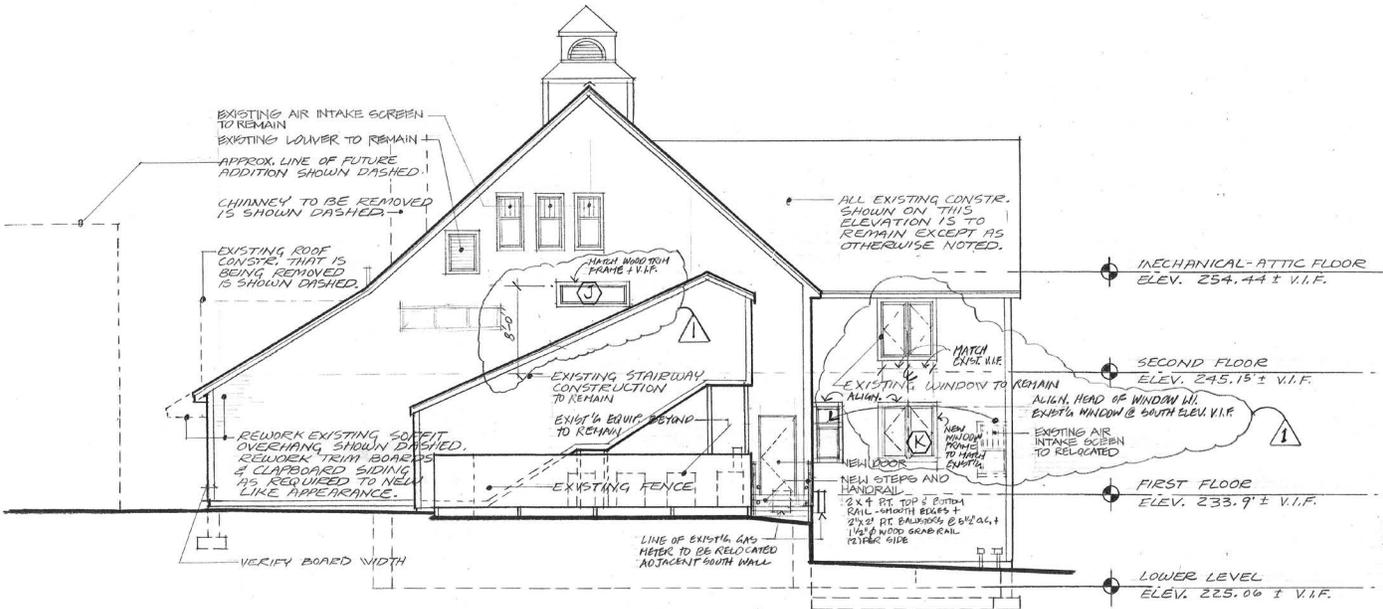
DISTANCE FROM WALL VARIES

SOFFIT 3'-10"

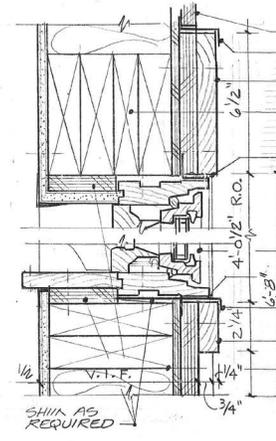
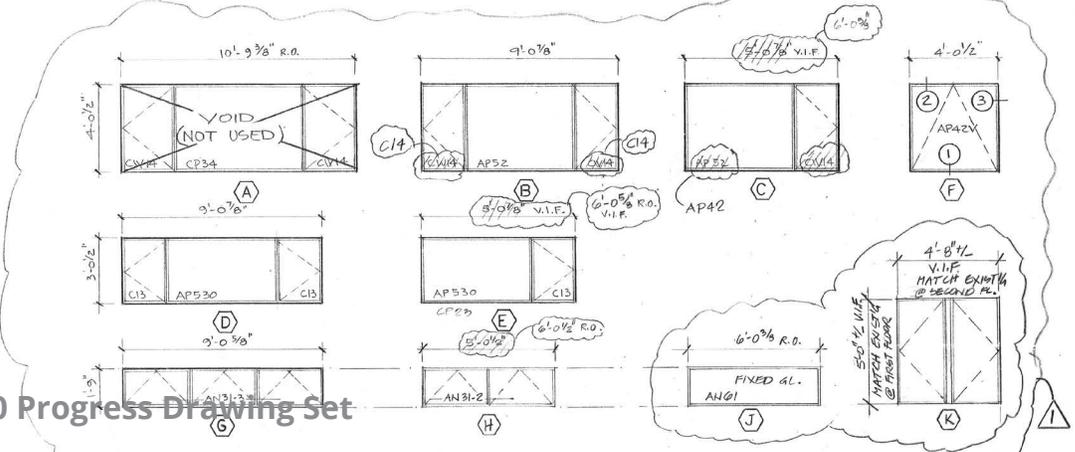




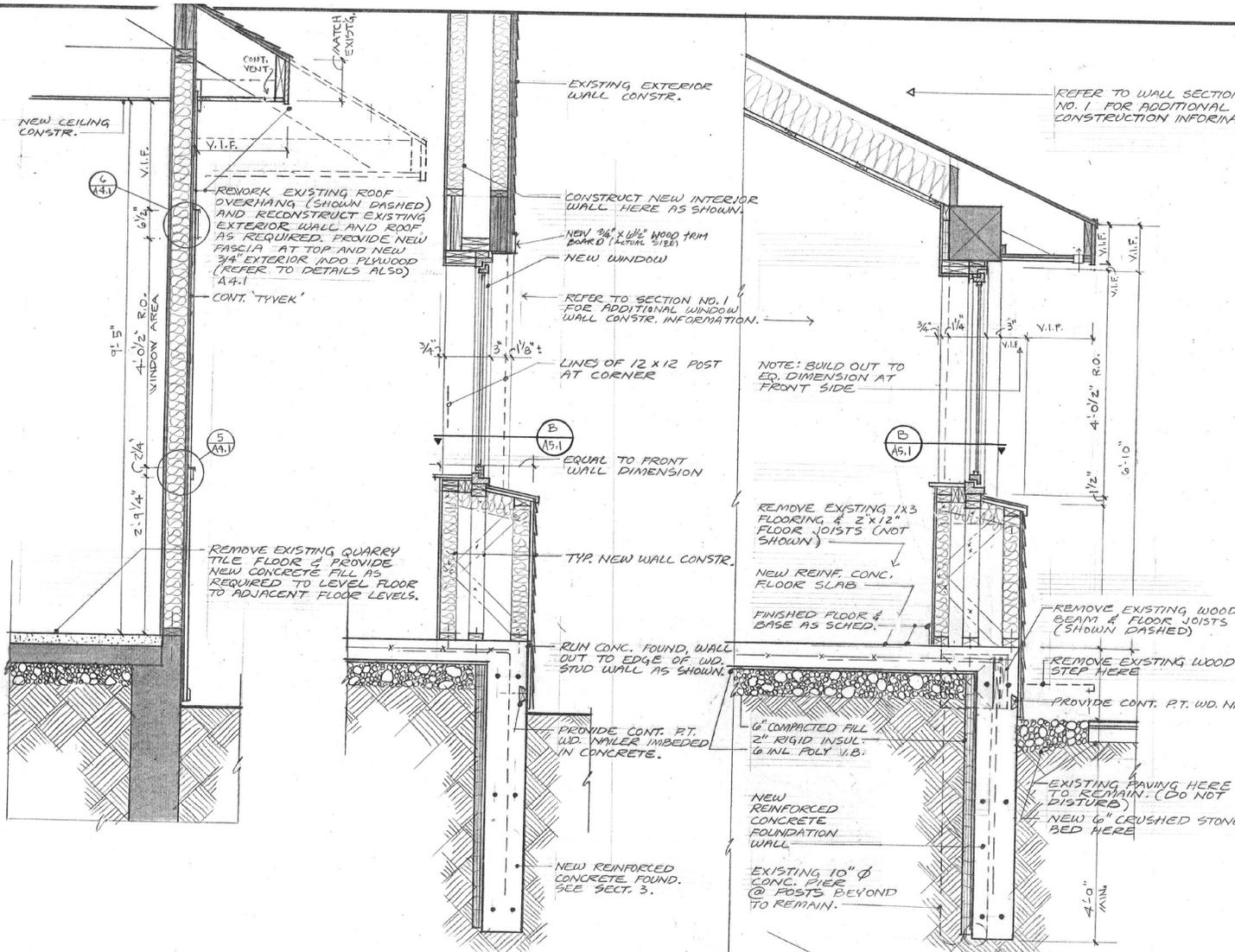
**EAST ELEVATION**  
1/8" = 1'-0"



**WEST ELEVATION**



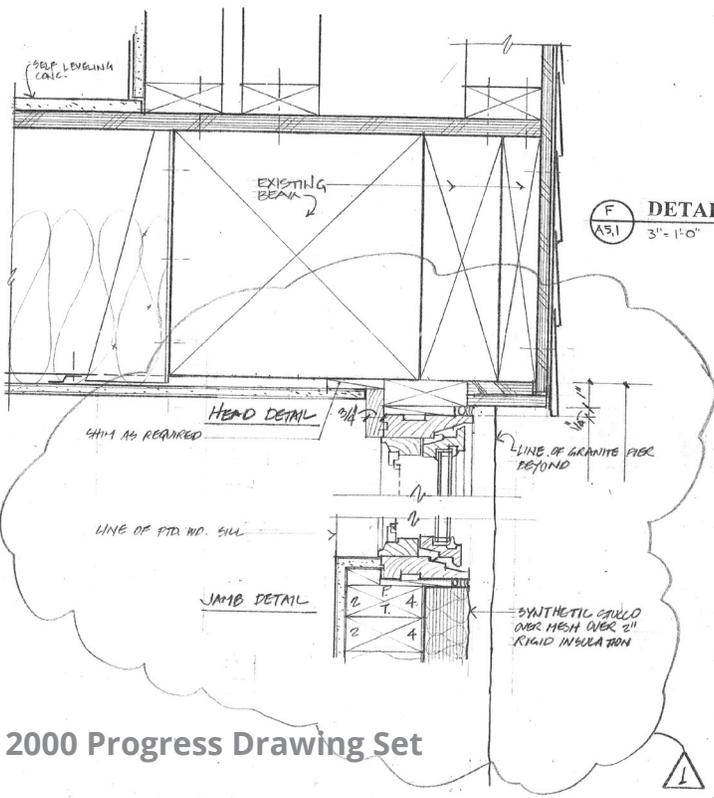




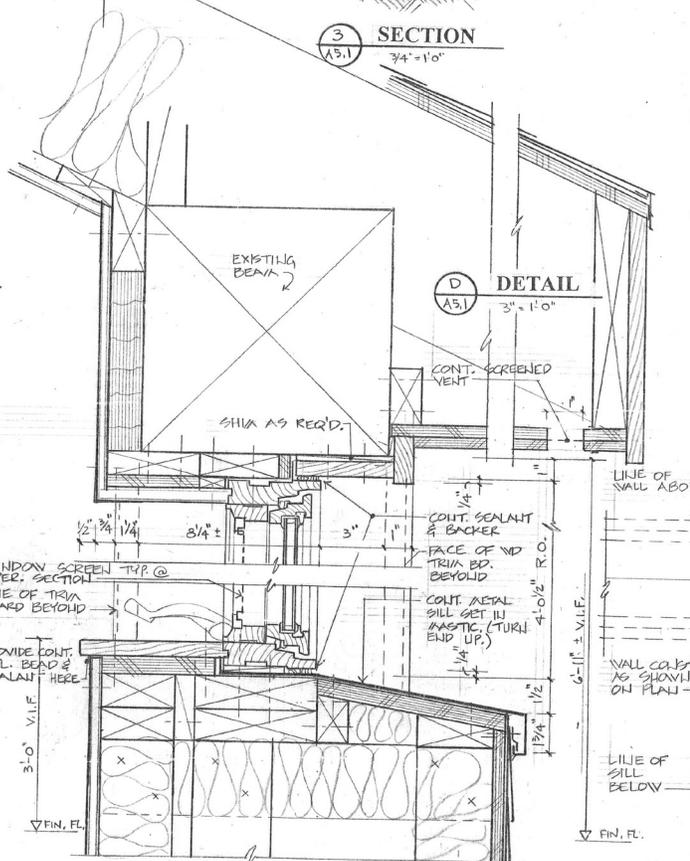
5 SECTION  
3/4" = 1'-0"

4 SECTION  
3/4" = 1'-0"

3 SECTION  
3/4" = 1'-0"



F DETAIL  
3" = 1'-0"

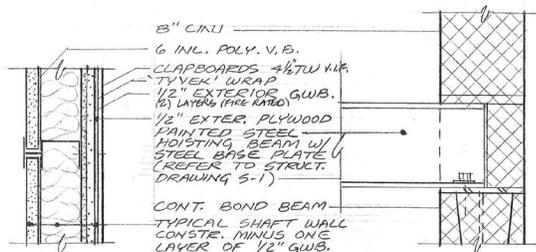


D DETAIL  
3" = 1'-0"

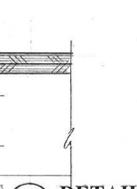
C DETAIL  
3" = 1'-0"



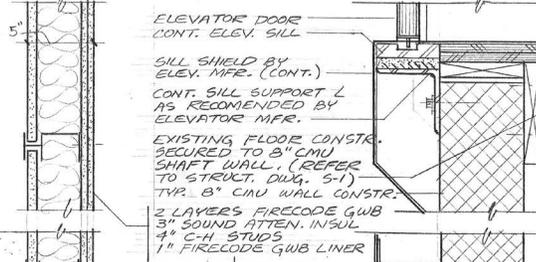
**DETAIL P**  
1/2" = 1'-0"



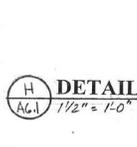
**DETAIL K**  
1/2" = 1'-0"



**DETAIL N**  
1/2" = 1'-0"



**DETAIL J**  
1/2" = 1'-0"



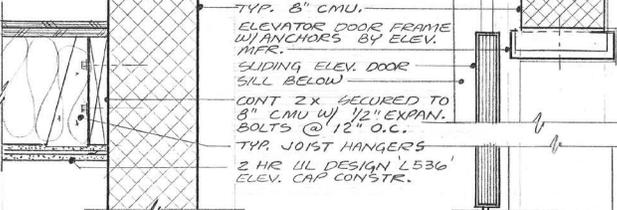
**DETAIL M**  
1/2" = 1'-0"



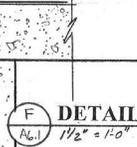
**DETAIL H**  
1/2" = 1'-0"



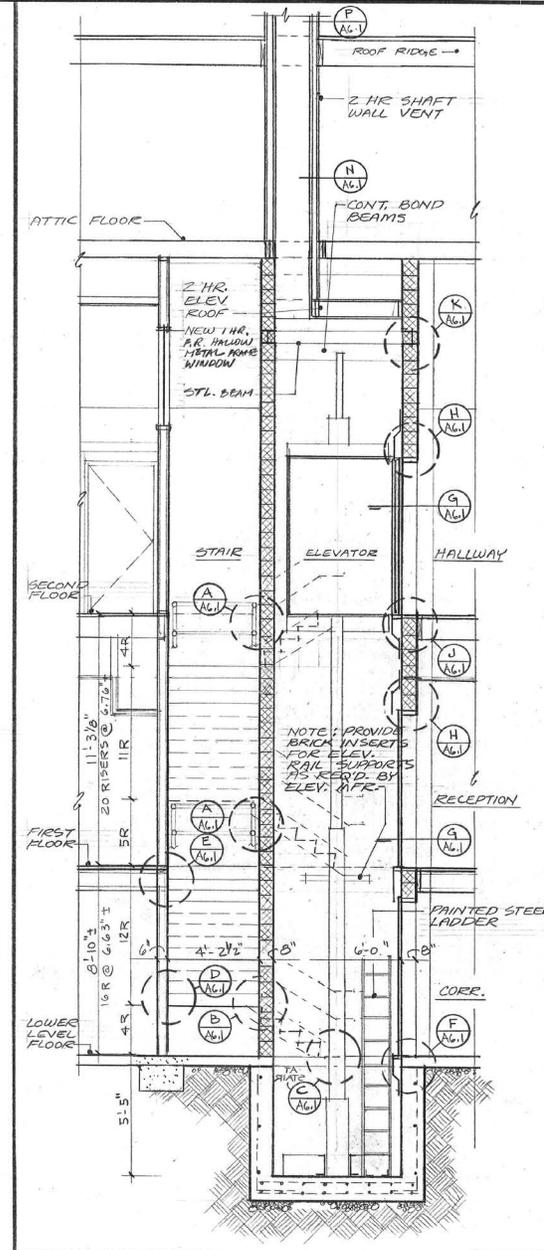
**DETAIL L**  
1/2" = 1'-0"



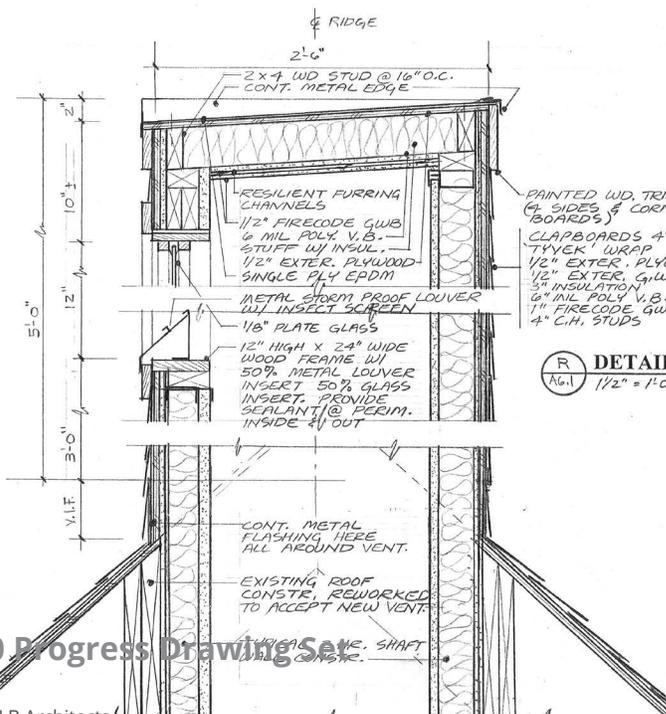
**DETAIL G**  
1/2" = 1'-0"



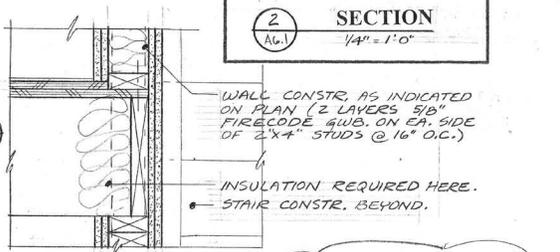
**DETAIL F**  
1/2" = 1'-0"



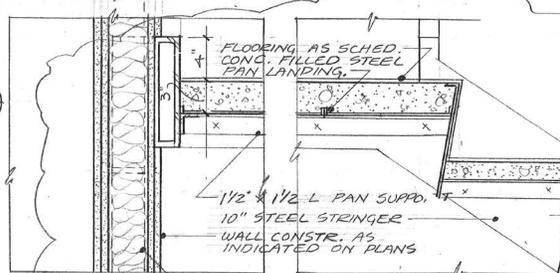
**SECTION 2**  
1/4" = 1'-0"



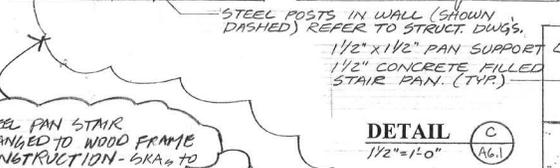
**DETAIL E**  
1/2" = 1'-0"



**DETAIL D**  
1/2" = 1'-0"

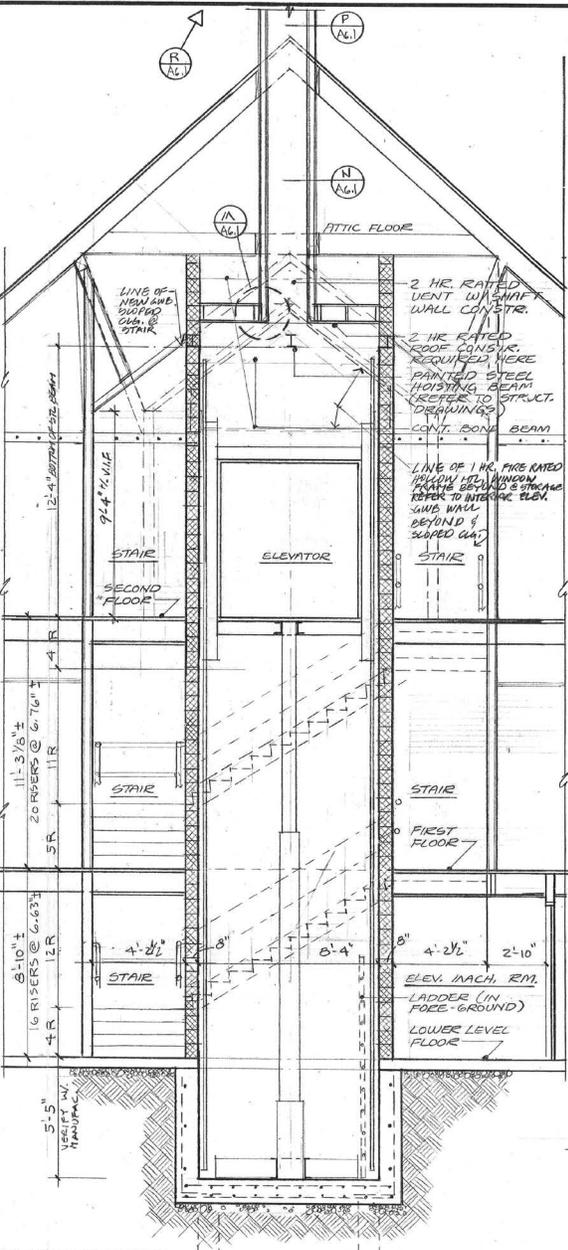


**DETAIL C**  
1/2" = 1'-0"



STEEL PAN STAIR CHANGED TO WOOD FRAME CONSTRUCTION - GKA TO FOLLOW

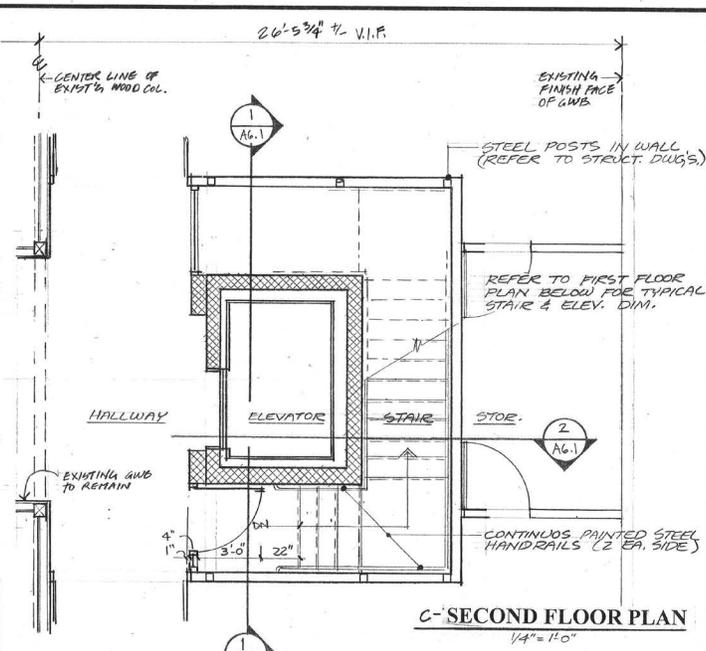
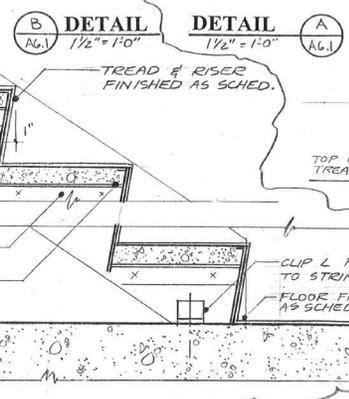
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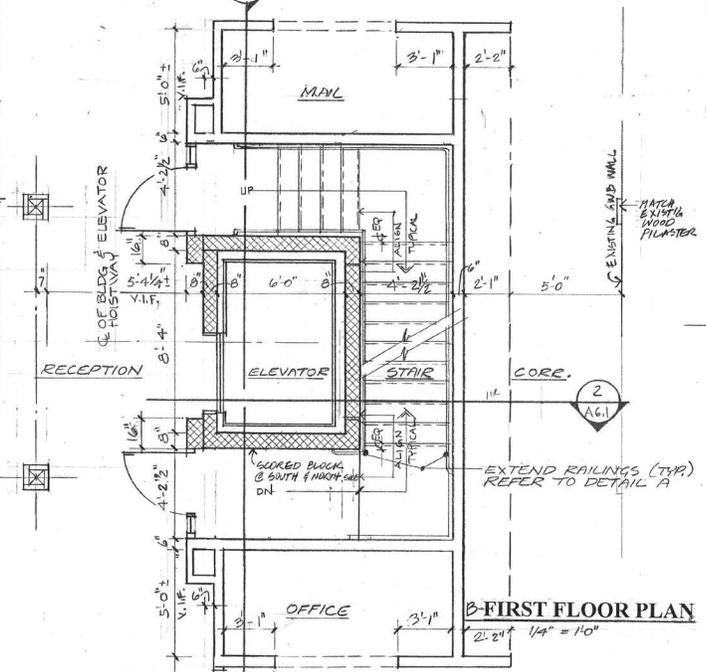
**SECTION**  
1/4" = 1'-0"

PROVIDE APPROPRIATE ANCHOR BOLTS FOR WALL TYPE. PROVIDE BLOCKING BACKUP AT G.W.B. CONST.

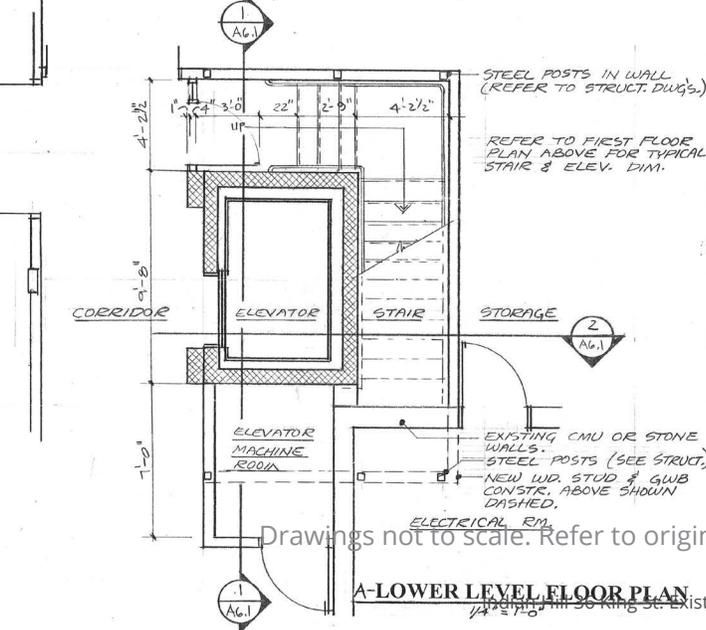
1/2" Ø PAINTED STEEL HANDRAILS (2-EA. SIDE OF STAIR) RUN CONT. PAST TOP NOSING BY 12" AND BEYOND BOTTOM NOSING BY 24". SUPPORTS @ 4'-6" O.C. MAX



**C- SECOND FLOOR PLAN**  
1/4" = 1'-0"



**B- FIRST FLOOR PLAN**  
1/4" = 1'-0"



**A- LOWER LEVEL FLOOR PLAN**  
1/4" = 1'-0"

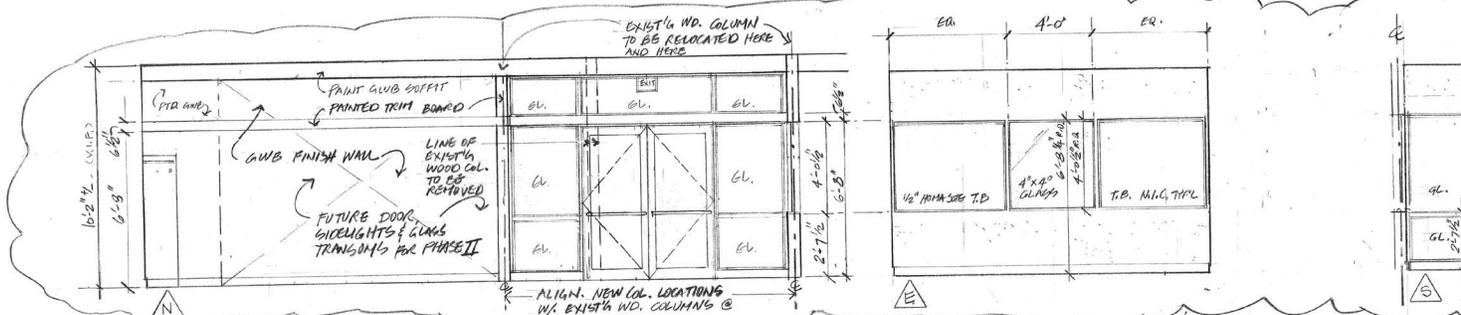
RENOVATIONS AND ADDITIONS TO  
**INDIAN HILL ARTS**  
36 KINGS ROAD, LITTLETON, MA

The Office of Michael Rosenfeld, Inc., Architects  
543 Massachusetts Avenue, West Acton, MA 01720

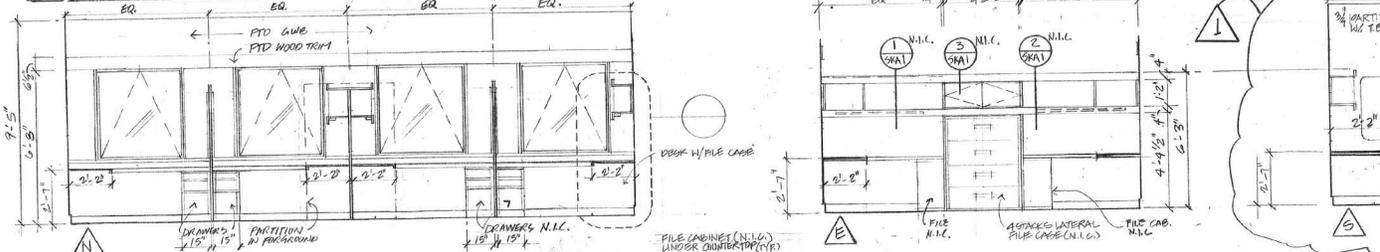
Rev. No.	Date	Description
1		REVISED TO REFLECT GMP CHANGE DATED 11.01.05

STAIR & ELEVATOR SECTIONS & DETAILS	
Title	STAIR & ELEVATOR SECTIONS & DETAILS
Job No.	
Drawing No.	
Scale	1/2" = 1'-0"
Date	
Drawn	A.G.C.
Checked	
A6.1	
Drawing Conditions Report	
SHEET 9 OF 18	

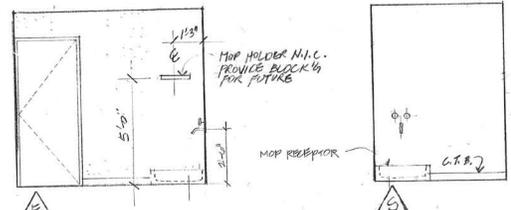
Drawings not to scale. Refer to original drawing set.



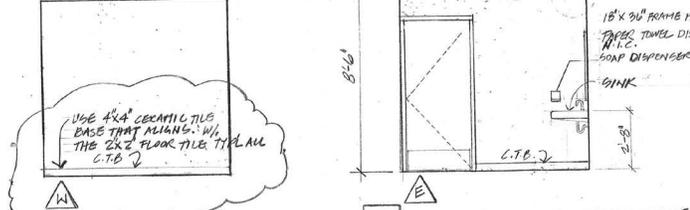
1 LOBBY (RM# 102)



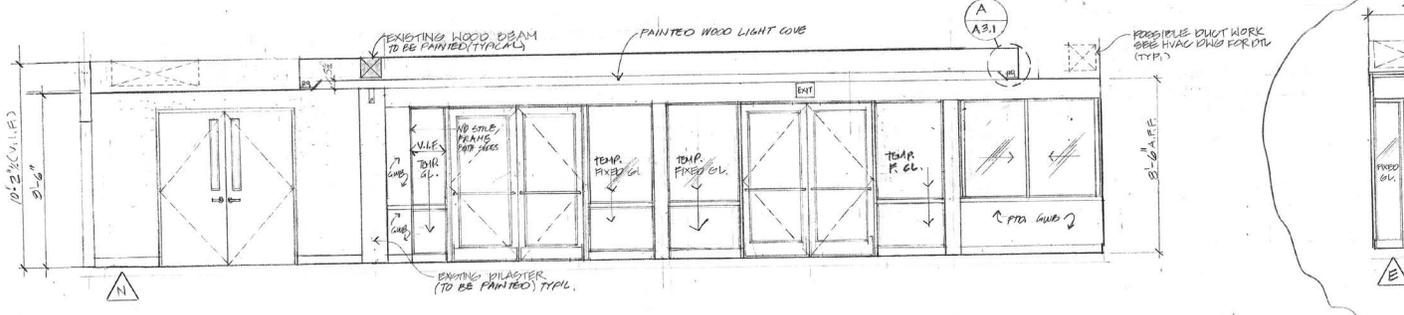
2 ADMINISTRATION OFFICE (RM# 103)



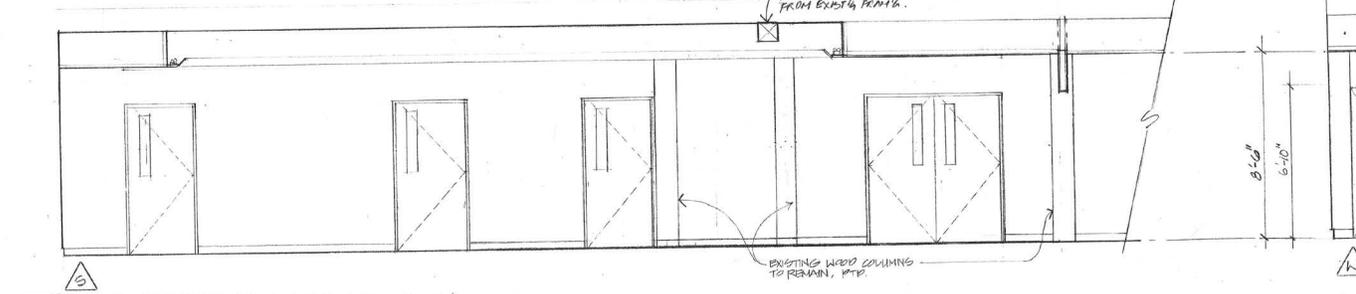
3 JANITOR CLOSET (RM# 104)



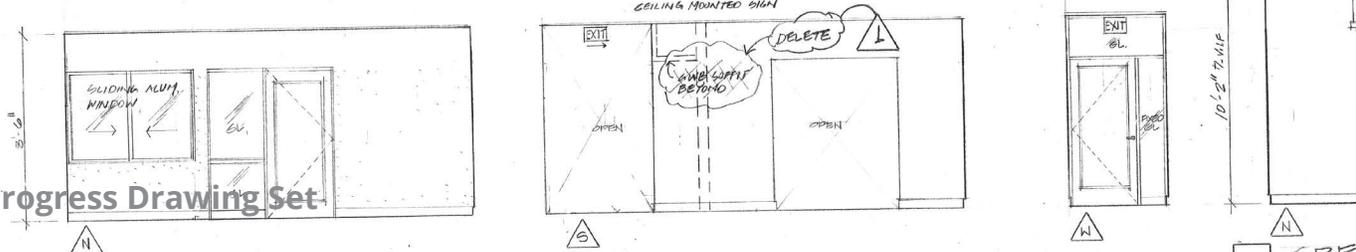
4 HANDICAP TOILET



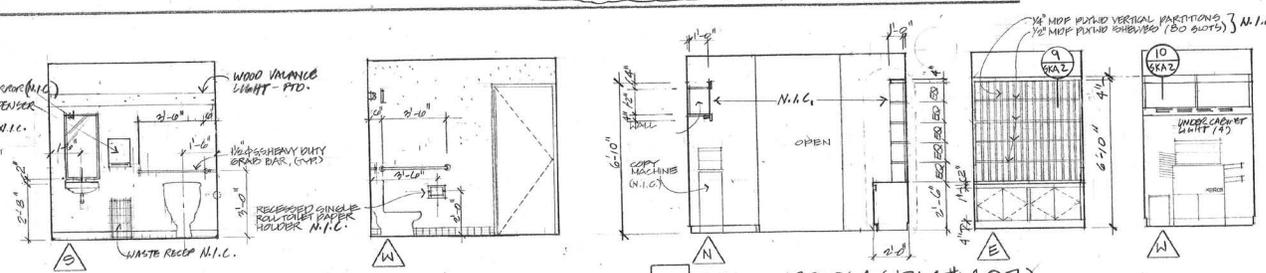
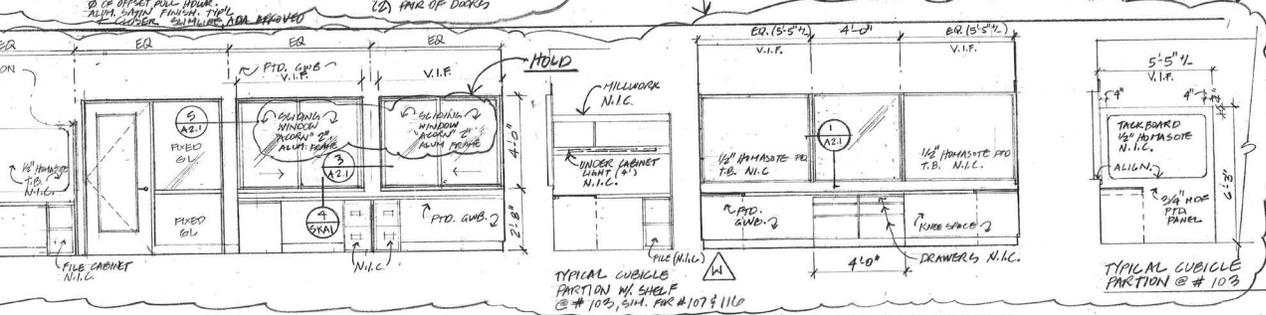
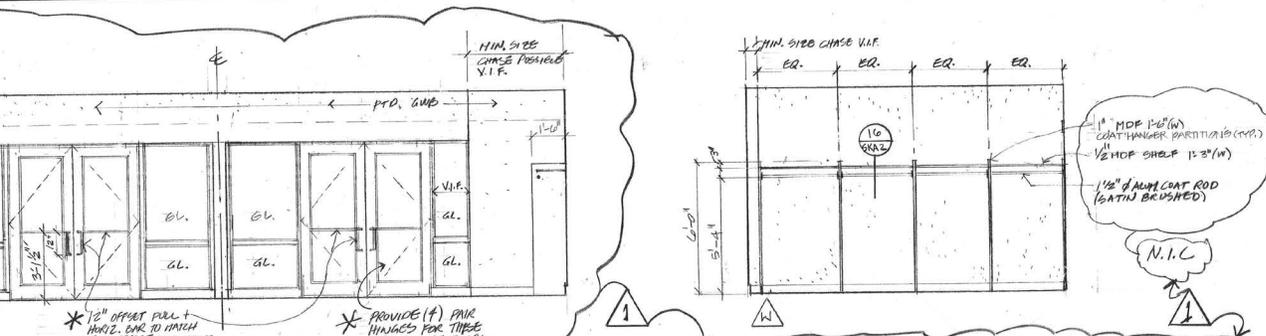
6 RECEPTION (RM# 106)



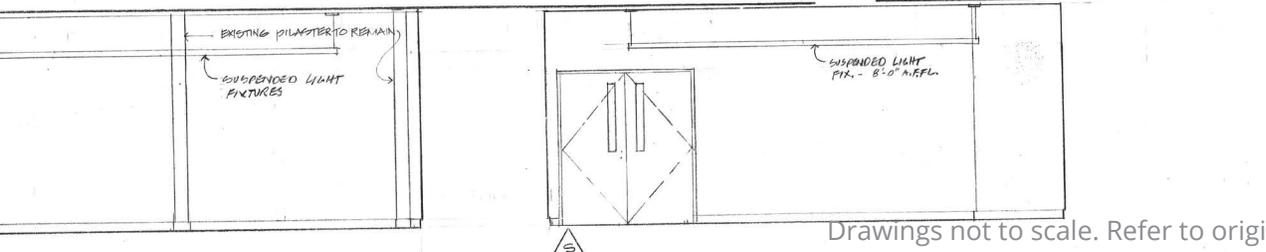
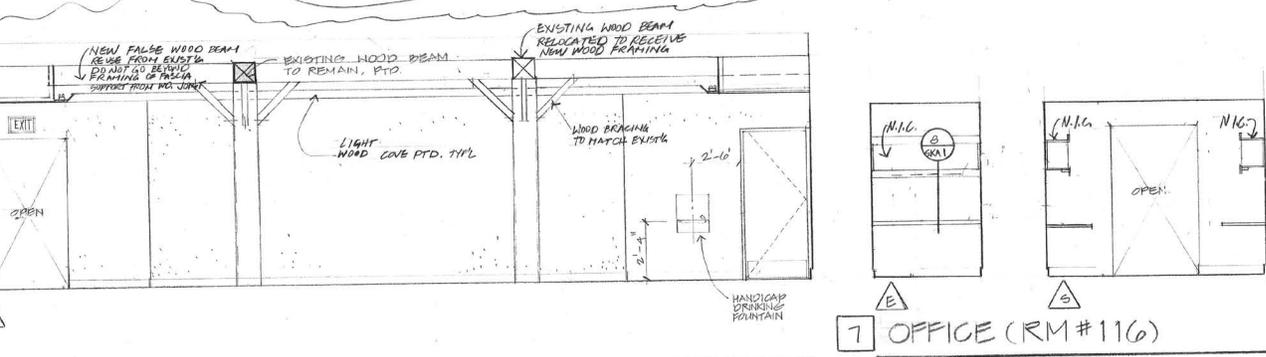
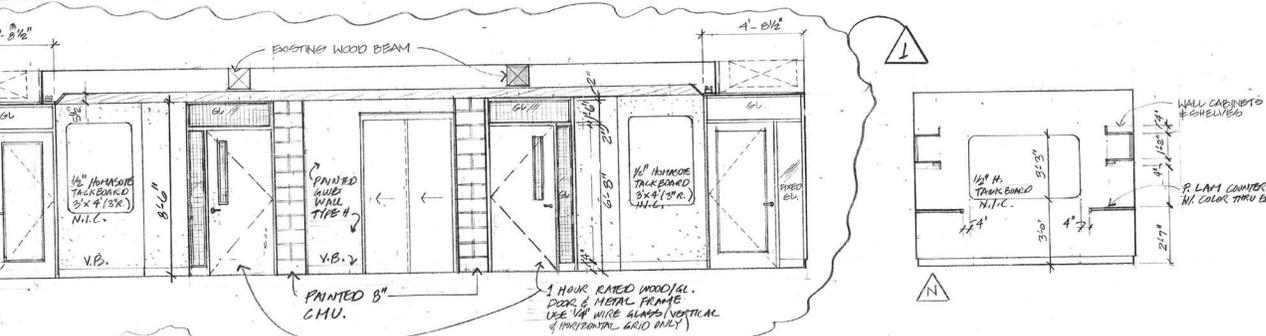
8 CORRIDOR (RM# 108)



9 GREENHOUSE (RM# 109)



(RM# 105) 5 MAIL ROOM (RM # 107)



EN ROOM (RM # 101) 7 OFFICE (RM # 116)

Drawings not to scale. Refer to original drawing set.

RENOVATIONS AND ADDITIONS TO  
INDIAN HILL ARTS  
36 KINGS ROAD • LITTLETON, MA

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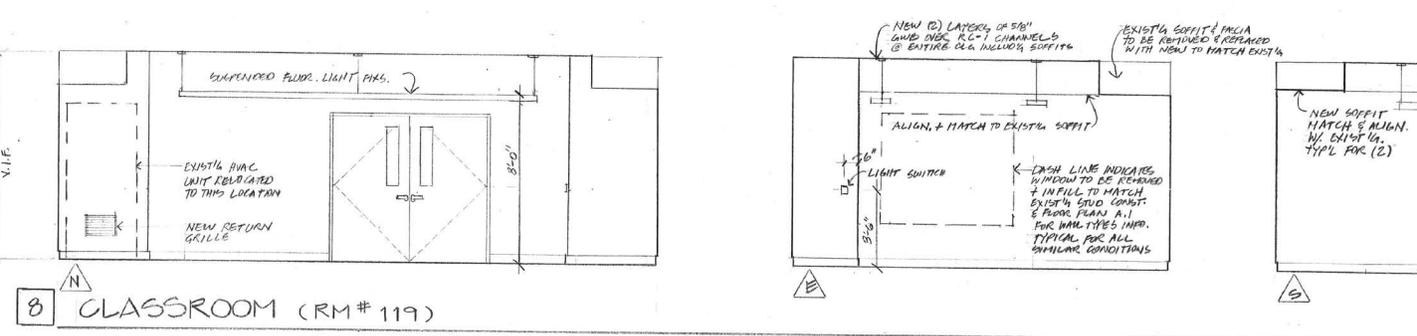
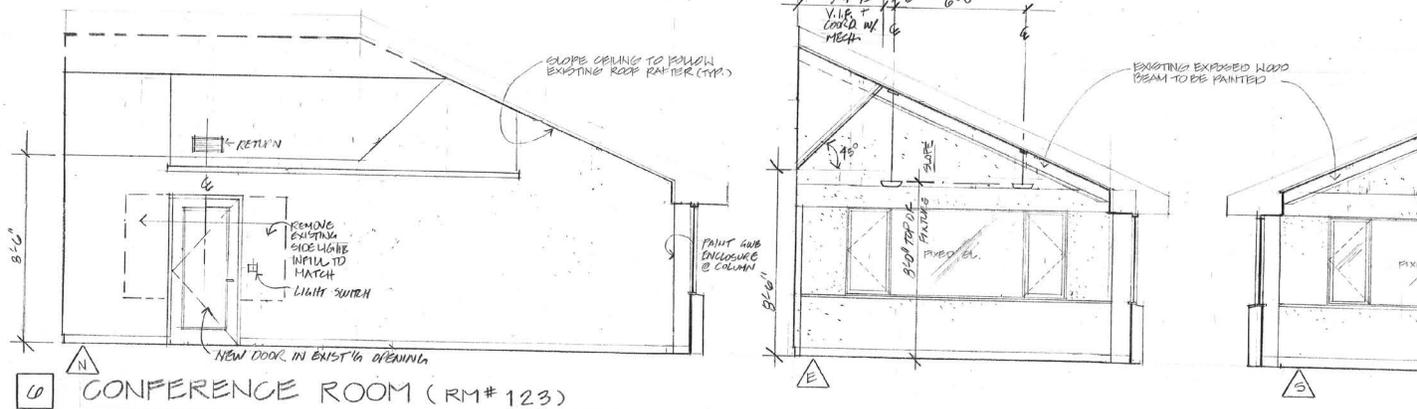
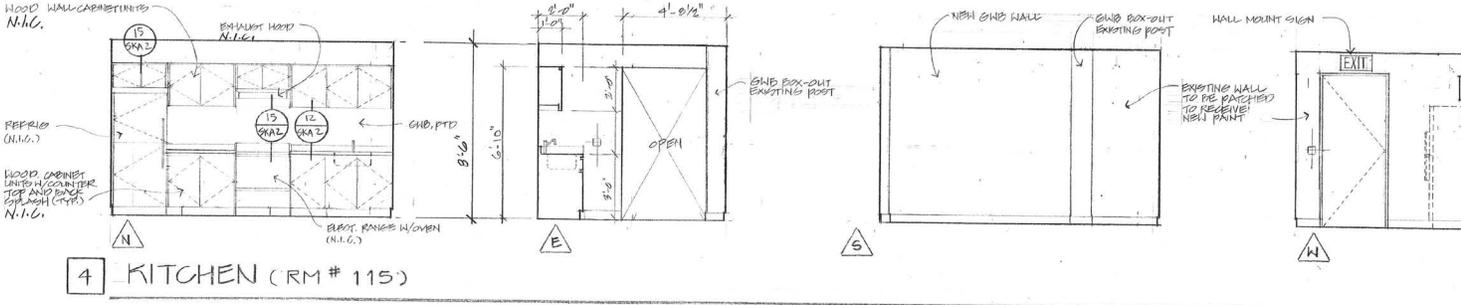
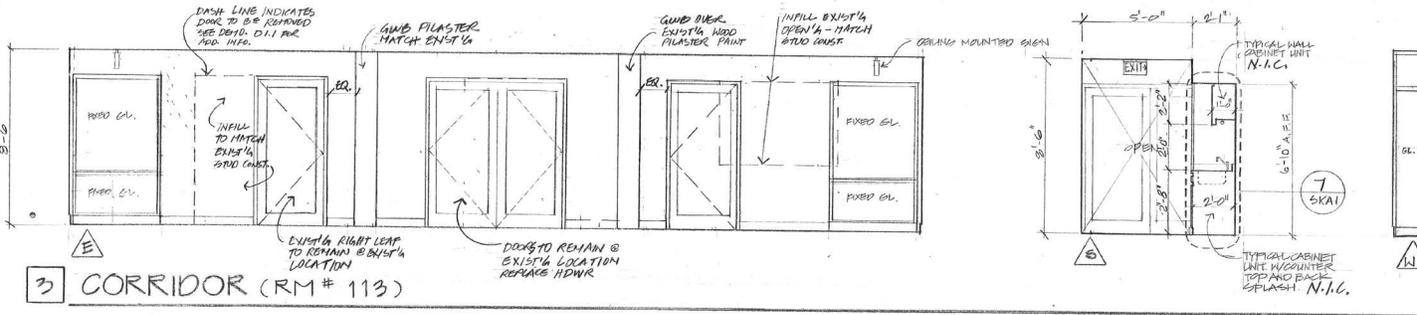
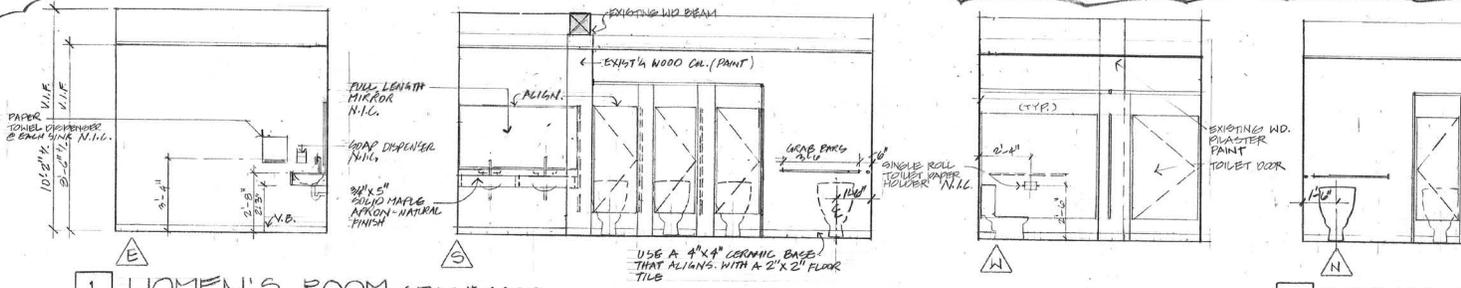
Rev. No.	Date	Description
1		REVISED TO REFLECT GMP BUDGET SAVINGS 11/2/13

INTERIOR ROOM ELEVATIONS NO.1

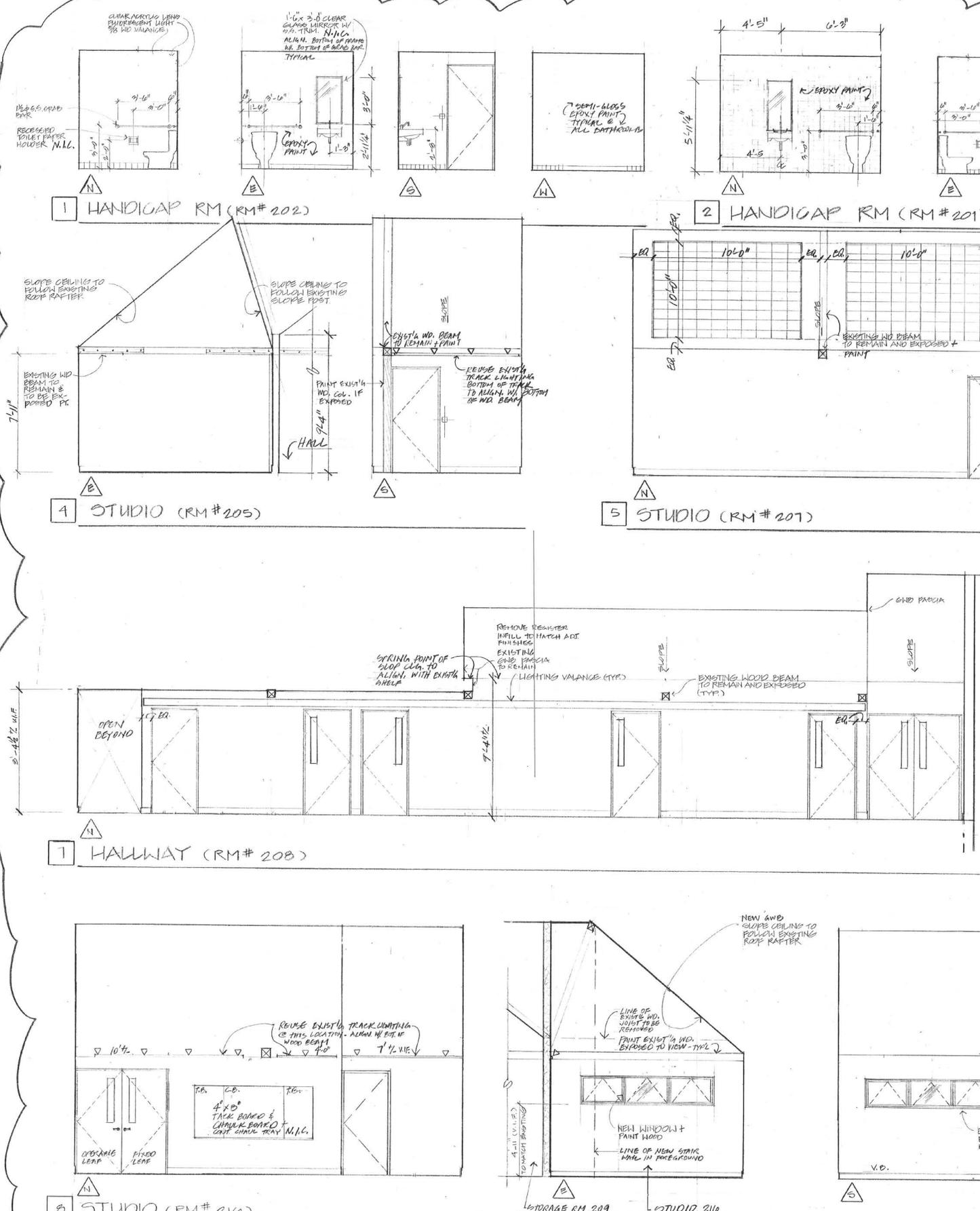
Title  
Job No.  
Drawing No.

Scale 1/4" = 1'-0"  
Date © OMIR, Inc.  
Drawn  
Checked

A71

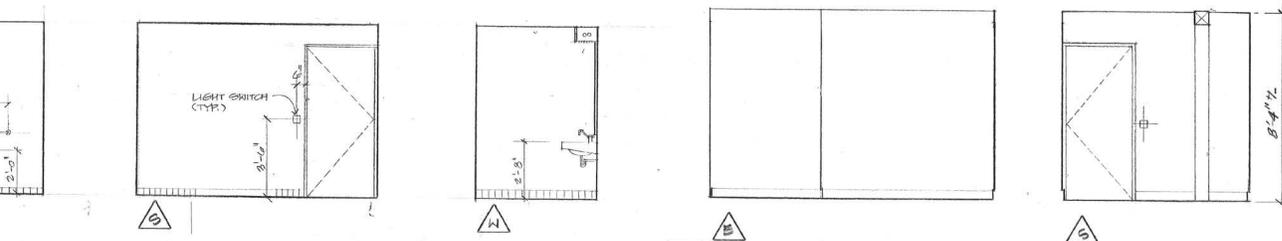




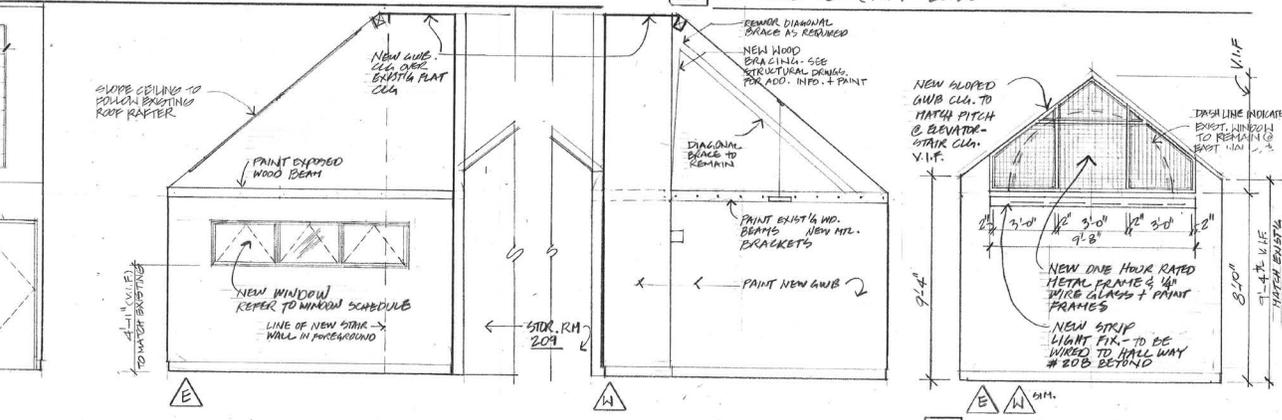


2000 Progress Drawing Set

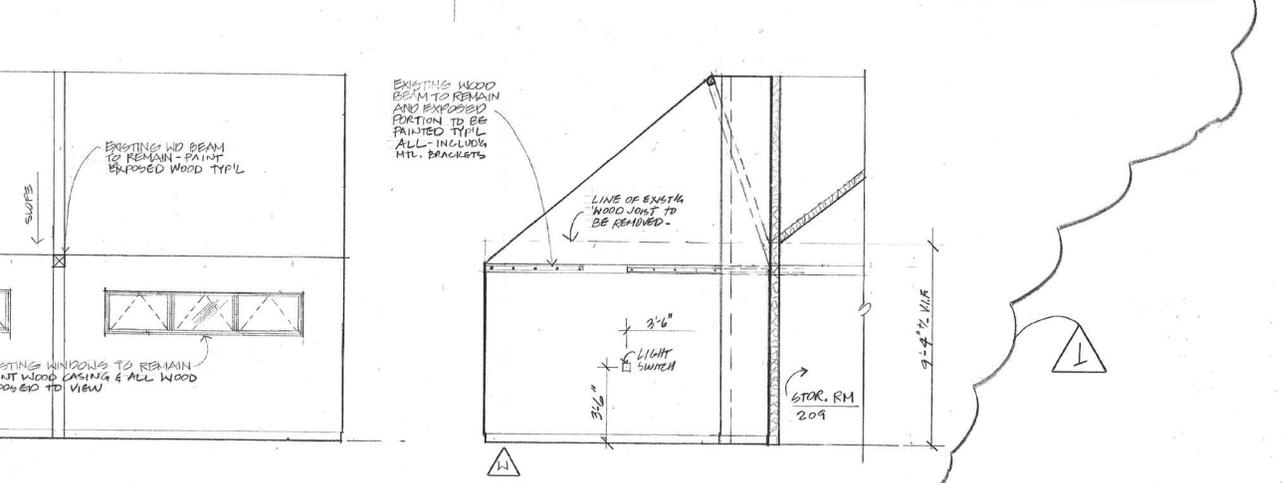
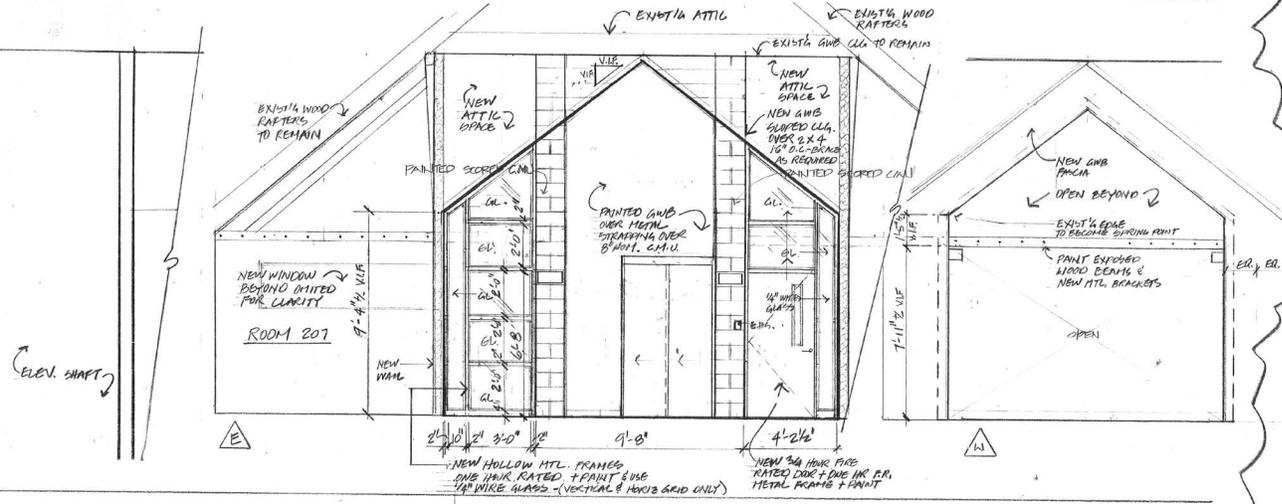
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**3 STUDIO (RM# 209)**



**4 STOR. (RM# 209)**



Drawings not to scale. Refer to original drawing set.

**INTERIOR ROOM ELEVATIONS NO.3**

Rev. No.	Date	Description
1		REVISED TO REFLECT AMP ADDRESS, DATED 11.6.95

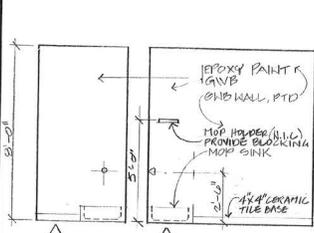
  

Date	Scale	Drawn	Checked
© OMR, Inc.			

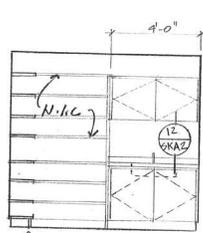
  

Job No.	
Drawing No.	

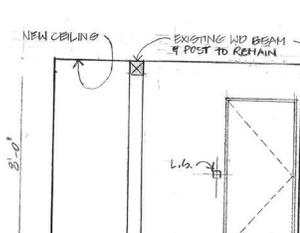
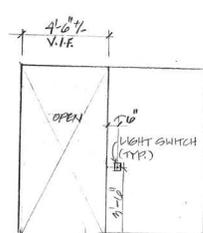
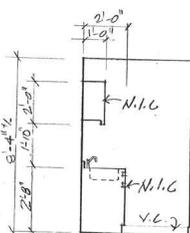
**A7.3**



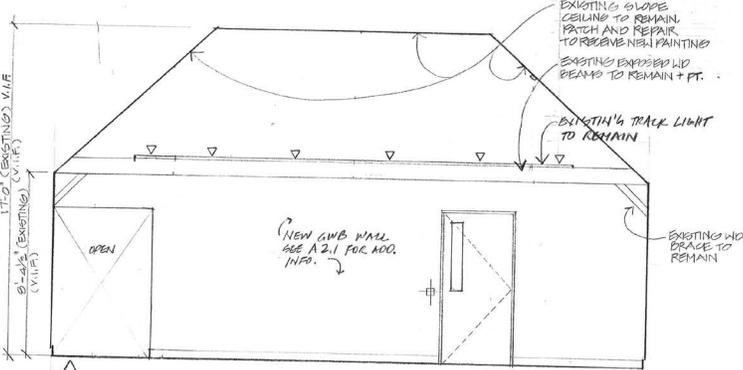
1 JANITOR CLOSET (RM# 211)



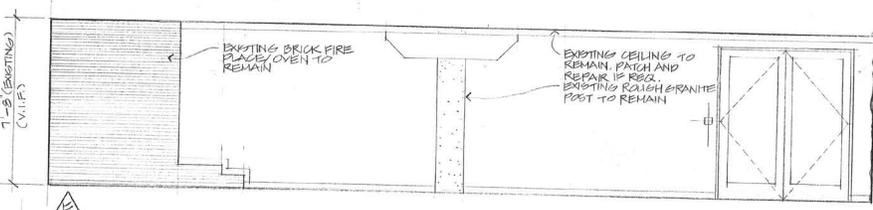
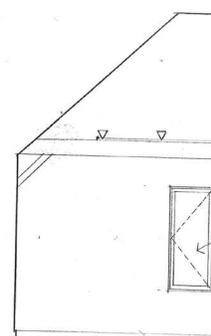
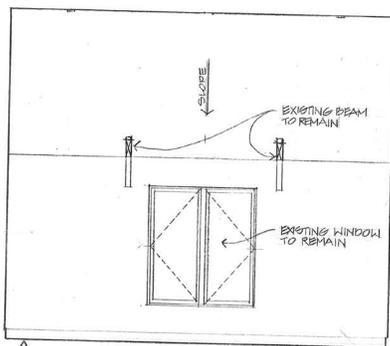
2 STORAGE (RM# 212)



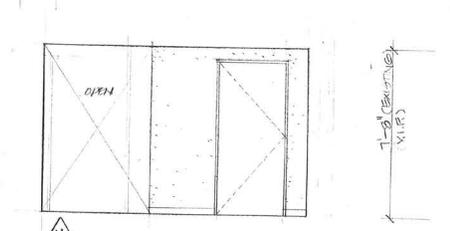
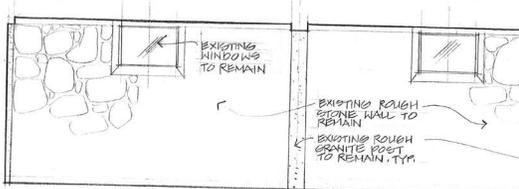
3 STUDIO (RM# 213)



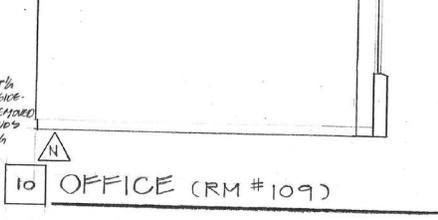
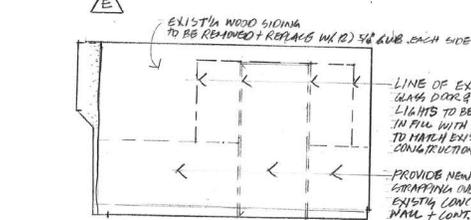
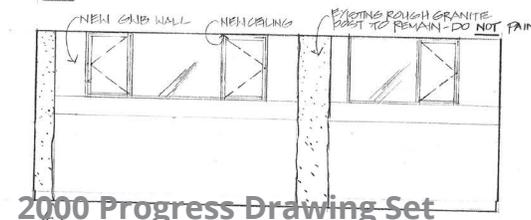
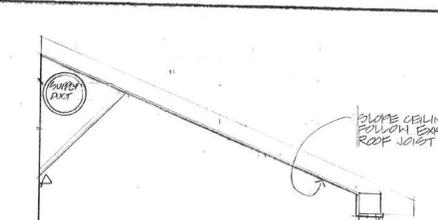
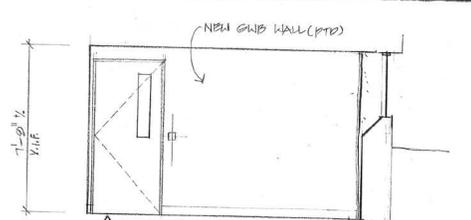
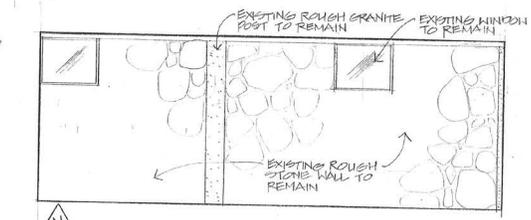
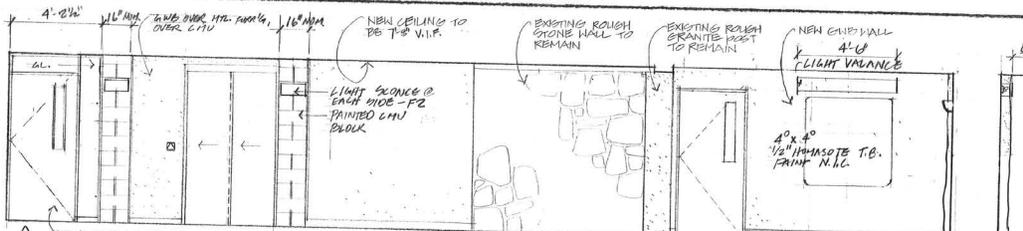
5 CLASSROOM (RM# 217)



6 STORAGE (RM# L03)

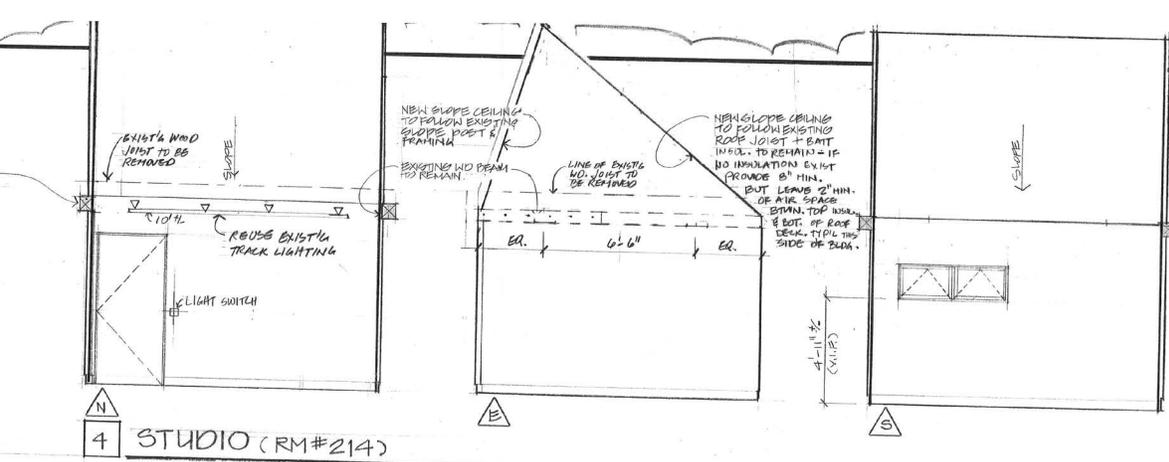


8 CORRIDOR (RM# L04)

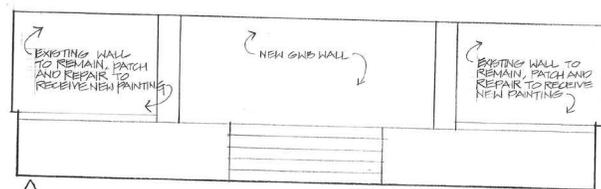
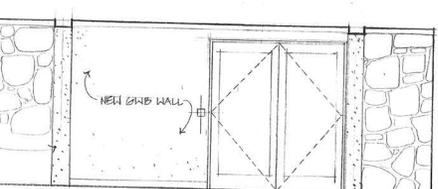
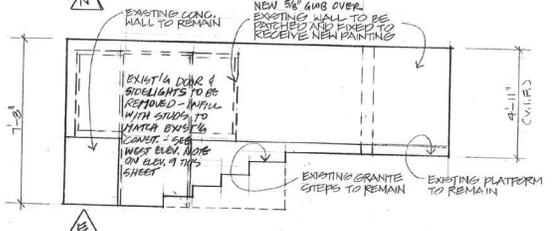
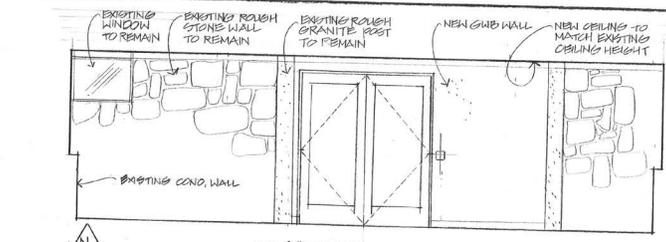
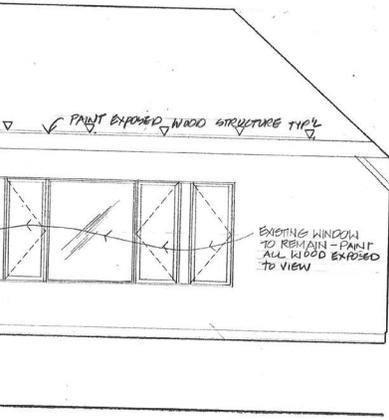


9 STUDIO (RM# L07)

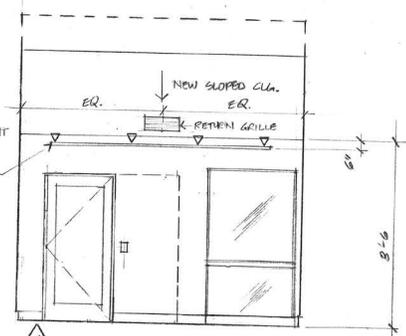
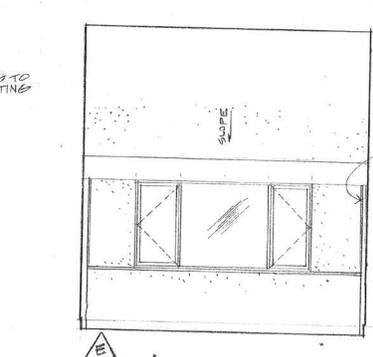
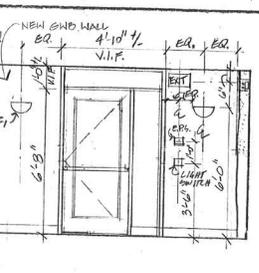
10 OFFICE (RM # 109)



4 STUDIO (RM#214)



7 STORAGE (RM# L07)



RENOVATIONS AND ADDITIONS TO  
INDIAN HILL ARTS  
36 KINGS ROAD • LITTLETON, MA

The Office of Michael Rosenfeld, Inc., Architects  
543 Massachusetts Avenue, West Acton, MA 01720

Rev. No.	Date	Description
1		REVISED TO REFLECT AMP BUDGET DATED 11.16.15

INTERIOR ROOM ELEVATIONS NO. 4			
Date	Scale	Drawn	Checked
© OMR, Inc.	1/4" = 1'-0"		
Title	Job No.	Drawing No.	
		A7.4	
Indian Hill 36 King St. Existing Conditions Report			
SHEET 13 OF 18			

Drawings not to scale. Refer to original drawing set.

# ROOM FINISH SCHEDULE

## ROOM FINISH SCHEDULE ABBREVIATIONS & NOTES

ROOM DESCRIPTION	WALLS		N = NORTH S = SOUTH		W = WEST E = EAST		FLOOR	BASE	CEIL'G		No. NOTES
	A = ALL	G PGB	PGB	CT	WD	NFR			TYPE	HGT	
<b>LOWER LEVEL</b>											
L01	STORAGE		A				NFR	NFR	NFR	7'-6"	
L02	STORAGE		A								
L03	STORAGE		A								
L04	CORRIDOR		A				YCT	VC	ACT1		8
LC5	ELEV. MACHINE RM.		A				VCT	VC	P&B		6
L06	ELECTRIC RM.		A				NFR	NFR			5
L07	STUDIO		A				CPI	VC	P&B ACT2		4
L08	STUDIO		A				CPI	VC			4
L09	STORAGE		A				NFR	NFR	NFR	V.I.F.	
<b>FIRST FLOOR</b>											
101	GREEN ROOM		A				CPI	VC	PGB	10'-1 1/2"	4, B
102	VESTIBULE		A				VCT	VC		10'-0 1/2"	4, B
103	ADMIN/GENERAL OFFICE		A				CPI	VC	AGT3	9'-5"	4, B
104	JANITORS CLOSET	A					CT	CT		8'-6"	1, 4, 7
105	HANDICAPPED TOILET	A					CT	CT			1, 4, 7
106	RECEPTION		A				WD	VC	P&B	10'-2 1/2"	4, B, SEE SPEC. WOOD FINISH
107	MAIL ROOM		A				CPI	VC	ACT1	8'-6"	7
108	CORRIDOR		A								7
109	OFFICE		A								
110	WOMENS TOILET	A					CT	CT			1, 4, 7
111	MENS TOILET	A					CT	CT			1, 4, 7
112	STAIR	A					CPI	VC	P&B	VARIES	7, 4
113	CORRIDOR		A				CPI	VC	ACT1	8'-6"	7
114	BREAK ROOM		A				CPI	VC	ACT1	8'-6"	7
115	SERVING KITCHEN		A				WD	VC	ACT1	8'-6"	7
116	OFFICE		A				CPI	VC	ACT1	8'-6"	7
117	CORRIDOR		A								
118	OFFICE		A								
119	CLASSROOM		A				CP2	VC	P&B	10'-2 1/2"	4, B
120	STUDIO		A				CPI	VC		VARIES	2, B
121	STUDIO		A								2, B
122	STUDIO		A								2, B
123	CONFERENCE/BOARD RM.		A				CPI	VC			2, B
<b>SECOND FLOOR</b>											
201	HANDICAPPED TOILET	A					CT	CT	PGB	8'-4 1/2"	1, 9
202	HANDICAPPED TOILET	A					CT	CT			1, 9
203	STUDIO		A				CPI	VC			1, B
204	STUDIO		A								2, 4
205	STUDIO		A								2, 4, B
206	STUDIO		A								2, 4, B
207	STUDIO		A								2, 4, B
208	HALLWAY		A								2, 4
209	STORAGE		A								2, 4
210	STAIR	A					YCT	VC			2, 4, 4
211	JANITORS CLOSET	A					CT	CT		8'-4 1/2"	1
212	STORAGE		A				YCT	VC			
213	STUDIO		A				CPI	VC			2, 4, B
214	STUDIO		A								2, 4, B
215	STUDIO		A								2, 4, B
216	STUDIO		A								2, 4, B
217	CLASSROOM		A				CP2	VC			2, 4, B
218	EXISTING STAIR						CPI	VC			3

**ABBREVIATIONS**

**WALLS**  
 G PGB GLAZE PAINTED GYPSUM BOARD (EPROX)  
 PGB PAINTED GYPSUM BOARD  
 CT CERAMIC TILE  
 WD WOOD  
 NFR NO FINISH REQUIRED

**FLOORS**  
 VCT VINYL COMPOSITION TILE (2 TYPES OF TILE, FOR FIELD & BORDER)  
 CT CERAMIC TILE  
 WD WOOD (existing (refinished)  
 CH CONCRETE WITH HARDENER  
 NFR NO FINISH REQUIRED  
 CP CARPET (CPI EXTENDED), CP2 WITH CUSHION)

**BASE**  
 VC VINYL COVE  
 VS VINYL STRAIGHT  
 WD WOOD (existing (refinished)  
 CT CERAMIC TILE  
 NFR NO FINISH REQUIRED

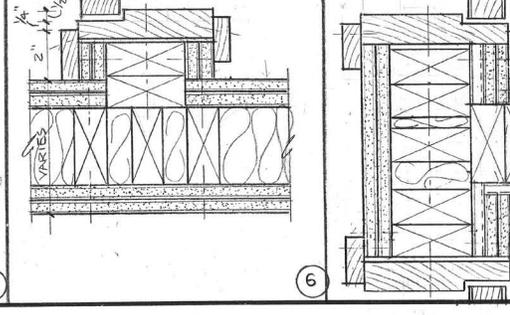
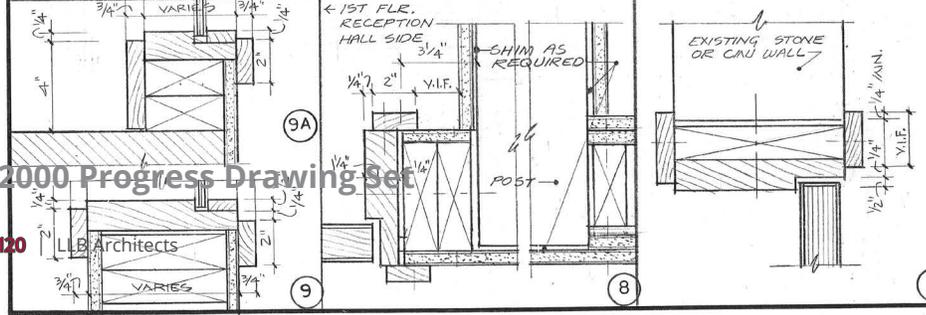
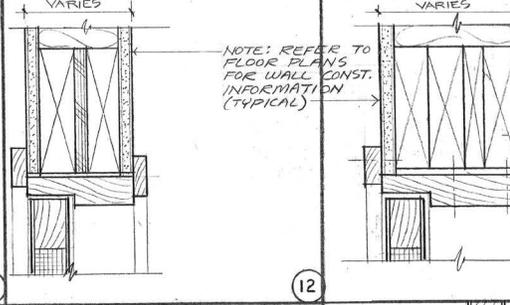
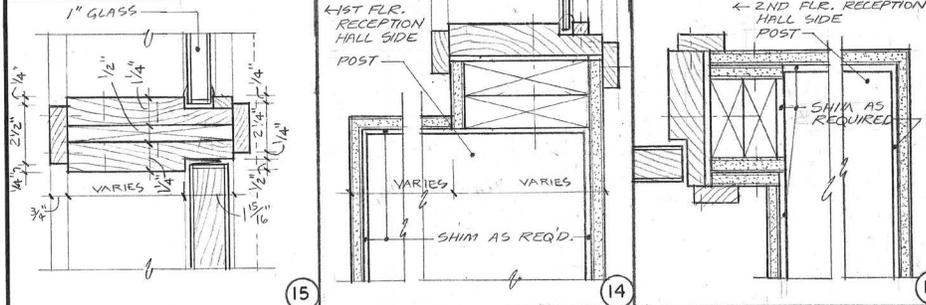
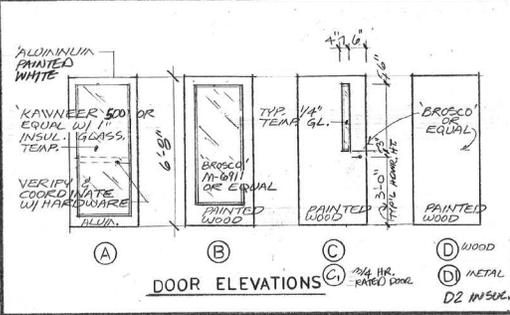
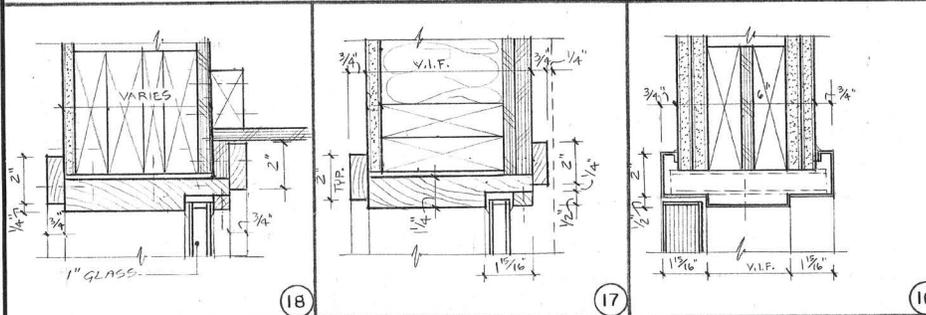
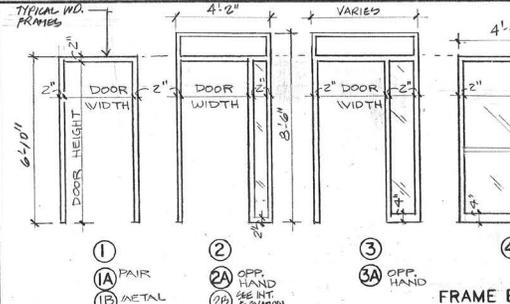
**CEIL'GS**  
 PGB PAINTED GYPSUM BOARD  
 ACT1 ACOUSTICAL CEILING TILE TYPE 1  
 ACT2 ACOUSTICAL CEILING TILE TYPE 2  
 PFC PAINTED EXPOSED CONSTRUCTION  
 NFR NO FINISH REQUIRED

**GENERAL NOTES:**

- PROVIDE A PRIME COAT AND TWO FINISH COATS ON ALL WALLS TO RECEIVE PAINT FINISH (EXCEPT AS OTHERWISE NOTED)
- PRIME COAT AND ONE FINISH COAT IS REQUIRED ON WALLS BEHIND ALL EQUIPMENT.
- REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**NUMBERED NOTES:**

- PROVIDE CERAMIC TILE FINISH ON WET WALL ONLY
- CEILING HEIGHT VARIES. REFER TO REFLECTED CEILING PLAN AND INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
- PROVIDE VINYL NOZING FOR STAIRS
- PAINT ALL WOOD EXPOSED TO VIEW
- COMPLY WITH BLDG CODE & ELECTRICAL CODE AS REQUIRED.
- 2 HR. CEILING CONSTRUCTION
- 3/8" THK. WATERPROOF INTERIOR PLYWOOD UNDERLAYMENT 2X6 STUDS FOR ADDITIONAL INFO.
- PROVIDE 6/8" LEVELING "SHIMMER"



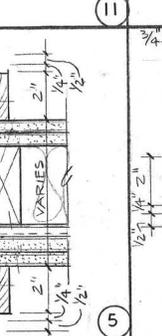
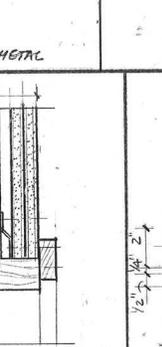
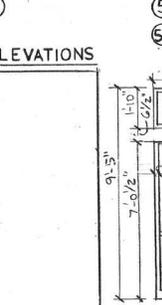
DOOR & FRAME SCHEDULE  
 ABBREVIATIONS & NOTES

- ABBREVIATIONS**
- RD RIGHT HAND
  - LD LEFT HAND
  - RHR RIGHT HAND REVERSE
  - LHR LEFT HAND REVERSE
  - BDL BORROWED LIGHT
  - SLDG SLIDING
- MATERIALS**
- HM HOLLOW METAL
  - SCW SOLID CORE WOOD
  - PM PRESSED METAL

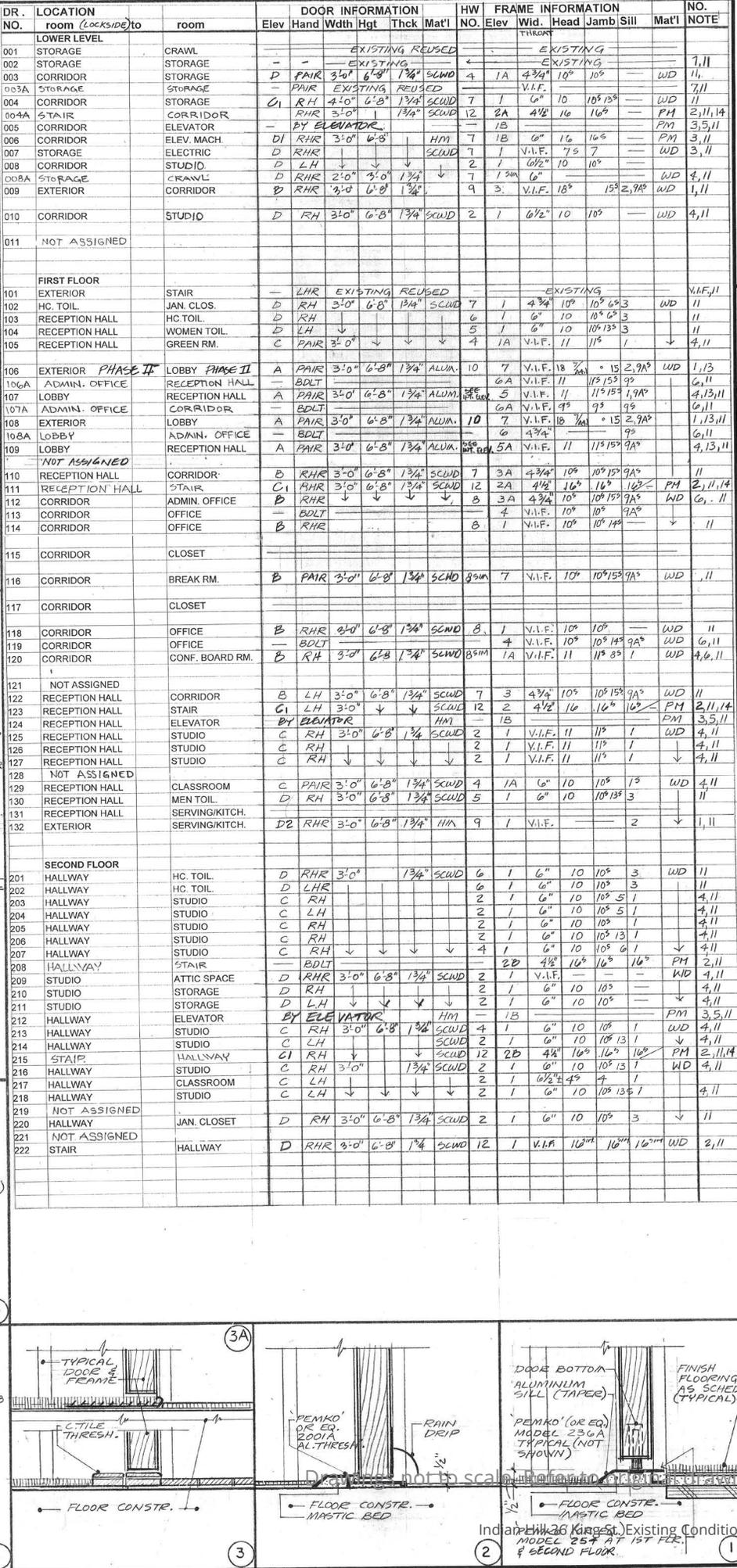
**GENERAL NOTES:**  
 ALL GLASS IN INTERIOR DOORS AND FRAMES SHALL BE 1/4" THICK CLEAR, TEMPERED GLASS.  
 ALL GLASS IN EXTERIOR DOORS AND FRAMES SHALL BE 3/8" THICK CLEAR, INSULATED, & TEMPERED GLASS.  
 REFER TO SPECIFICATIONS FOR DOOR, FRAME, & HARDWARE INFORMATION (INCLUDING SET NO.).

**NUMBERED NOTES:**  
 PROVIDE COMPLETE WEATHERSTRIPPING, INCLUDING RAIN DRIPS, AND ALUMINUM THRESHOLD.  
 PROVIDE 3/4 HOUR FIRE RATED DOOR, FRAME, & HARDWARE.  
 PROVIDE 2 HOUR FIRE RATED DOOR, FRAME, & HARDWARE.  
 PROVIDE CONTIN. SOUND SEAL AT PERIMETER OF THIS DOOR, INCLUDING DOOR BOTTOM & ALUM. THRESHOLD.  
 DOOR, FRAME & HARDWARE BY ELEVATOR MFR.  
 REFER TO DRAWING A-2.1 FOR ADDITIONAL DETAIL INFORMATION.  
 REUSE THE EXISTING DOOR & FRAME AT THIS SAME LOCATION.  
 REUSE AN EXISTING DOOR FROM LOWER LEVEL LOCATION TO THIS NEW FIRST FLOOR LOCATION. (PAINT)  
 REUSE AN EXISTING DOOR FROM FIRST FLOOR TO THIS NEW FIRST FLOOR LOCATION. (PAINT)  
 REUSE AN EXISTING LOWER LEVEL DOOR TO THIS NEW LOWER LEVEL LOCATION. (PAINT)

**PAINT FRAMES**  
 CLOSEUP NOT REQUIRED  
 IN LIEU OF WOOD FRAME HERE, PROVIDE AN ALUMINUM FRAME SYSTEM (KAWNEER) AS SET AT EXTERIOR & "KAWNEER" 450 SYSTEM AT INTERIOR UNDER ALT. #1.  
 HOLLOW METAL FRAME - 1 1/2" FIRE RATED & PAINT



DR. NO.	LOCATION room (LOCKSIDE) to	room	DOOR INFORMATION						FRAME INFORMATION					NO. NOTE			
			Elev	Hand	Width	Hgt	Thck	Mat'l	NO.	Elev	Wid.	Head	Jamb		Sill	Mat'l	
<b>LOWER LEVEL</b>																	
001	STORAGE	CRAWL															
002	STORAGE	STORAGE														7, 11	
003	CORRIDOR	STORAGE	D	PAIR	3'0"	6'8"	1 3/4"	SCWD	4	1A	4 3/4"	10"	10 1/2"		WD	11	
003A	STORAGE	STORAGE														7, 11	
004	CORRIDOR	STORAGE	G	RH	4'0"	6'8"	1 3/4"	SCWD	7	1	6"	10"	10 1/2"	13 1/2"	PM	2, 11, 14	
004A	STAIR	CORRIDOR														3, 5, 11	
005	CORRIDOR	ELEVATOR														3, 11	
006	CORRIDOR	ELEV. MACH.	D	RHR	3'0"	6'8"		HM	7	1B	6"	16"	16 1/2"		PM	3, 11	
007	STORAGE	ELECTRIC	D	RHR				SCWD	7	1	V.I.F.	7	7		WD	3, 11	
008	CORRIDOR	STUDIO	D	LH					2	1	6 1/2"	10"	10"			4, 11	
008A	STORAGE	CRAWL	D	RHR	2'0"	3'0"	1 3/4"		7	1 3/4"	6"				WD	4, 11	
009	EXTERIOR	CORRIDOR	D	RHR	3'0"	6'8"	1 3/4"		9	3	V.I.F.	18"	15"	2, 9A"	WD	1, 11	
010	CORRIDOR	STUDIO	D	RH	3'0"	6'8"	1 3/4"	SCWD	2	1	6 1/2"	10"	10"		WD	4, 11	
011	NOT ASSIGNED																
<b>FIRST FLOOR</b>																	
101	EXTERIOR	STAIR														V.I.F., 11	
102	HC. TOIL.	JAN. CLOS.	D	RH	3'0"	6'8"	1 3/4"	SCWD	7	1	4 3/4"	10"	10 1/2"	3"	WD	11	
103	RECEPTION HALL	HC. TOIL.	D	RH					6	1	6"	10"	10 1/2"	3"		11	
104	RECEPTION HALL	WOMEN TOIL.	D	LH					5	1	6"	10"	10 1/2"	3"		11	
105	RECEPTION HALL	GREEN RM.	C	PAIR	3'0"				4	1A	V.I.F.	11"	11 1/2"	1"		4, 11	
106	EXTERIOR	PHASE II LOBBY PHASE II	A	PAIR	3'0"	6'8"	1 3/4"	ALUM.	10	7	V.I.F.	18 3/4"	15"	2, 9A"	WD	1, 13	
106A	ADMIN. OFFICE	RECEPTION HALL							6A	V.I.F.	11"	11 1/2"	9"		6, 11		
107	LOBBY	RECEPTION HALL	A	PAIR	3'0"	6'8"	1 3/4"	ALUM.	5	V.I.F.	11"	11 1/2"	9"		4, 13, 11		
107A	ADMIN. OFFICE	CORRIDOR							6A	V.I.F.	9"	9"			6, 11		
108	EXTERIOR	LOBBY	A	PAIR	3'0"	6'8"	1 3/4"	ALUM.	10	7	V.I.F.	18 3/4"	15"	2, 9A"	WD	1, 13, 11	
108A	LOBBY	ADMIN. OFFICE							6	4 3/4"					6, 11		
109	LOBBY	RECEPTION HALL	A	PAIR	3'0"	6'8"	1 3/4"	ALUM.	5A	V.I.F.	11"	11 1/2"	9"		4, 13, 11		
110	RECEPTION HALL	CORRIDOR	B	RHR	3'0"	6'8"	1 3/4"	SCWD	7	3A	4 3/4"	10"	10 1/2"	9A"		11	
111	RECEPTION HALL	RECEPTION HALL	C	RHR	3'0"	6'8"	1 3/4"	SCWD	12	2A	4 1/2"	16"	16 1/2"		PM	2, 11, 14	
112	CORRIDOR	ADMIN. OFFICE	B	RHR					8	3A	4 3/4"	10"	10 1/2"	9A"	WD	6, 11	
113	CORRIDOR	OFFICE							4	V.I.F.	10"	10"	9A"				
114	CORRIDOR	OFFICE							8	1	V.I.F.	10"	10 1/2"				
115	CORRIDOR	CLOSET															
116	CORRIDOR	BREAK RM.	B	PAIR	3'0"	6'8"	1 3/4"	SCWD	8	7	V.I.F.	10"	10 1/2"	9A"	WD	11	
117	CORRIDOR	CLOSET															
118	CORRIDOR	OFFICE	B	RHR	3'0"	6'8"	1 3/4"	SCWD	8	1	V.I.F.	10"	10"		WD	11	
119	CORRIDOR	OFFICE							4	V.I.F.	10"	10 1/2"	9A"		WD	6, 11	
120	CORRIDOR	CONF. BOARD RM.	B	RH	3'0"	6'8"	1 3/4"	SCWD	1A	V.I.F.	11"	11 1/2"	8 1/2"	1"	WD	4, 6, 11	
121	NOT ASSIGNED																
122	RECEPTION HALL	CORRIDOR	B	LH	3'0"	6'8"	1 3/4"	SCWD	7	3	4 3/4"	10"	10 1/2"	9A"		WD	11
123	RECEPTION HALL	STAIR	C	LH	3'0"			SCWD	12	2	4 1/2"	16"	16 1/2"		PM	2, 11, 14	
124	RECEPTION HALL	ELEVATOR															
125	RECEPTION HALL	STUDIO	C	RH	3'0"	6'8"	1 3/4"	SCWD	2	1	V.I.F.	11"	11 1/2"	1"	WD	4, 11	
126	RECEPTION HALL	STUDIO	C	RH					2	1	V.I.F.	11"	11 1/2"	1"		4, 11	
127	RECEPTION HALL	STUDIO	C	RH					2	1	V.I.F.	11"	11 1/2"	1"		4, 11	
128	NOT ASSIGNED																
129	RECEPTION HALL	CLASSROOM	C	PAIR	3'0"	6'8"	1 3/4"	SCWD	4	1A	6"	10"	10 1/2"	15"	WD	4, 11	
130	RECEPTION HALL	MEN TOIL.	D	RH	3'0"	6'8"	1 3/4"	SCWD	5	1	6"	10"	10 1/2"	3"		11	
131	RECEPTION HALL	SERVING KITCH.															
132	EXTERIOR	SERVING KITCH.	D2	RHR	3'0"	6'8"	1 3/4"	HM	9	1	V.I.F.			2		1, 11	
<b>SECOND FLOOR</b>																	
201	HALLWAY	HC. TOIL.	D	RHR	3'0"			SCWD	6	1	6"	10"	10 1/2"	3"	WD	11	
202	HALLWAY	HC. TOIL.	D	LHR					6	1	6"	10"	10 1/2"	3"		11	
203	HALLWAY	STUDIO	C	RH					2	1	6"	10"	10 1/2"	5"		4, 11	
204	HALLWAY	STUDIO	C	LH					2	1	6"	10"	10 1/2"	5"		4, 11	
205	HALLWAY	STUDIO	C	RH					2	1	6"	10"	10 1/2"	5"		4, 11	
206	HALLWAY	STUDIO	C	RH					2	1	6"	10"	10 1/2"	5"		4, 11	
207	HALLWAY	STUDIO	C	RH					4	1	6"	10"	10 1/2"	6"		4, 11	
208	HALLWAY	STAIR							2B	4 1/2"	10"	10 1/2"	16"		PM	2, 11	
209	STUDIO	ATTIC SPACE	D	RHR	3'0"	6'8"	1 3/4"	SCWD	2	1	V.I.F.				WD	4, 11	
210	STUDIO	STORAGE	D	RH					2	1	6"	10"	10 1/2"			4, 11	
211	STUDIO	STORAGE	D	LH					2	1	6"	10"	10 1/2"			4, 11	
212	HALLWAY	ELEVATOR															
213	HALLWAY	STUDIO	C	RH	3'0"	6'8"	1 3/4"	SCWD	4	1	6"	10"	10 1/2"	1"	WD	4, 11	
214	HALLWAY	STUDIO	C	LH					2	1	6"	10"	10 1/2"	1"		4, 11	
215	HALLWAY	STUDIO	C	RH					12	2B	4 1/2"	16"	16 1/2"		PM	2, 11, 14	
216	HALLWAY	STUDIO	C	RH	3'0"			SCWD	2	1	6"	10"	10 1/2"	13"		WD	4, 11
217	HALLWAY	CLASSROOM	C	LH					2	1	6 1/2"	4 1/2"	4"	1"		4, 11	
218	HALLWAY	STUDIO	C	LH					2	1	6"	10"	10 1/2"	13 1/2"		4, 11	
219	NOT ASSIGNED																
220	HALLWAY	JAN. CLOSET	D	RH	3'0"	6'8"	1 3/4"	SCWD	2	1	6"	10"	10 1/2"	3"		11	
221	NOT ASSIGNED																
222	STAIR	HALLWAY	D	RHR	3'0"	6'8"	1 3/4"	SCWD	12	1	V.I.F.	10 1/2"	16 1/2"	16 1/2"	WD	2, 11	



**RENOVATIONS AND ADDITIONS TO INDIAN HILL ARTS**  
 36 KINGS ROAD, LITTLETON, MA

The Office of Michael Rosenfeld, Inc., Architects  
 543 Massachusetts Avenue, West Acton, MA 01720

DESCRIPTION: REVISED CHANGES TO REFLECT GMP ENOUGH DATE 11.01.15

DATE: 11.01.15

REV. NO.: 1

**DOOR, FRAME, & HARDWARE & ROOM FINISH SCHEDULE**

Checked: \_\_\_\_\_  
 Drawn: \_\_\_\_\_  
 Scale: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 © O.M.R., Inc.

Indian Hill 36 Kings Road Existing Condition Report  
 MODEL 257 AT 1ST FLOOR & SECOND FLOOR  
 SHEET 14 OF 18

2

Door #	DOORS						FRAMES						Fire Rating	Hdw. Group	REMARKS
	TYPE	MAT.	FIN.	SIZE			TYPE	MAT.	FIN.	DETAILS					
				WIDTH	HEIGHT	THICK				JAMB	HEAD	SILL			
D01	A	S.C. BIRCH	STAIN & URITHANE	(2) 36"	84"	1 3/4"	HM.	PAINTED		2"	2"			1	2,3
D02	A	S.C. BIRCH	STAIN & URITHANE	(2) 36"	84"	1 3/4"	HM.	PAINTED		2"	2"			2	3
D03	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			4	3 (2) fire rated for stairwell
D04	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			3A	2,3
D05	D	INEL. STL.	PAINTED	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			3A	1,3
D06	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			4A	3 (do we need lock set?)
D07	D	INEL. STL.	PAINTED	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			3	1,3
D08	E	S.C. BIRCH	STAIN & URITHANE	(2) 48"	120"	1 3/4"	HM.	PAINTED		2"	2"			8	2- SECTION 10' LEAF WITH 7'-0" LOWER & 3'-0" UPPER SECTION
D09	B	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			7	
D10	B	S.C. BIRCH	STAIN & URITHANE	(2) 36"	84"	1 3/4"	HM.	PAINTED		2"	2"			7	
D11	B	S.C. BIRCH	STAIN & URITHANE	(2) 36"	60"	1 3/4"	HM.	PAINTED		2"	2"			6	
D12	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			5	
D13	B	INEL. STL.	PAINTED	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			3	1,3
D14	D	INEL. STL.	PAINTED	48"	84"	1 3/4"	HM.	PAINTED		2"	2"			3A	1,3 no handles on outside
D15	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			5	3
D16	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			5	3
D17	C	ALUM. & GLASS	FACTORY WHITE	36"	84"	1 3/4"	HM.	FACTORY WHITE		2"	2"			3	1,3
D18	C	ALUM. & GLASS	FACTORY WHITE	36"	84"	1 3/4"	HM.	FACTORY WHITE		2"	2"			3	1,3
D19	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			5	3
D20	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			5	3
D21	B	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			5	
D22	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			5	
D23	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			3	3
D24	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"		1 HR.	4	2,3
D25	A	S.C. BIRCH	STAIN & URITHANE	36"	84"	1 3/4"	HM.	PAINTED		2"	2"			5	3

Should match other lobby doors?

ok per deck no threshold piano should be open out

not needed DT

not for ca

should be open out

Door

GENERAL

- 1) ALL GLASS IN INTERIOR DOORS & FRAMES SHALL BE 1/4" THICK CLEAR, SAFETY GLASS.
- 2) ALL GLASS IN EXTERIOR DOORS & FRAMES SHALL BE INSULATED & TEMPERED GLASS.
- 3) GLASS IN RATED DOORS TO BE 1/4" POLISHED WIRE GLASS.

does white match trim? but not aluminum? Jack ordered aluminum.

Doors in school are painted wood? If so then interior doors of new space should be too or stain + urithane for longer wear - are school doors

REMARKS

- 1) PROVIDE COMPLETE WEATHERSTRIPPING, INCLUDING RAIN DRIPS, AND ALUMINUM THRESHOLD.
- 2) PROVIDE 3/4 HOUR FIRE RATED FRAME AND HARDWARE.
- 3) PROVIDE CONTINUOUS SOUND SEAL AT PERIMETER OF DOOR.

HDR. GROUP

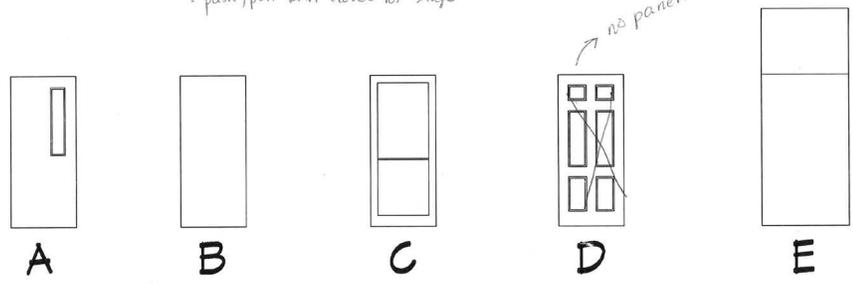
- 1) 3 PR B.B. BUTTS, 2-CLOSERS, 2-KICKPLATES 8x32", ADA PANIC BAR ON BOTH LEAVES INSIDE VESTIBULE, VERTICAL BAR TYPE, ADA LEVER & CYLINDER LOCKSET EA LEAF IN EXIST. BLDG. ON BOTH, 7" THRESHOLD.
- 2) 3 PR B.B. BUTTS, 2-CLOSERS, 2-KICKPLATES 8x32", ADA PANIC BAR ON BOTH LEAVES, ADA LEVER EA LEAF ON BOTH, 10" THRESHOLD.
- 3) 1-1/2 PR B.B. BUTTS, CLOSER, KICKPLATE 8x32", ADA PANIC BAR, ADA LEVER & CYLINDER LOCKSET, 7" THRESHOLD.
  - 3A) INCLUDES THRESHOLD.
  - 4) 1-1/2 PR B.B. BUTTS, CLOSER, KICKPLATE 8x32", ADA PANIC BAR, ADA LEVER.
    - 4A) INCLUDES THRESHOLD.
  - 5) 1-1/2 PR B.B. BUTTS, KICKPLATE 8x32", ADA LEVER & CYLINDER LOCKSET, WALL MTD. DOOR STOP.
  - 6) 3 PR BUTTS, FLUSH BOLTS ON INACTIVE LEAF, ADA LEVER & CYLINDER LOCKSET ON ACTIVE LEAF. - for piano - how does this work?
  - 7) 1-1/2 PR B.B. BUTTS, ADA LEVER BOTH SIDES, WALL MTD. DOOR STOP. - is this latched or like "church" doors - per DT push-pull w/ closer
  - 8) 5 PR BUTTS, FLUSH BOLTS ON INACTIVE LEAF, ADA LEVER BOTH SIDES, WALL MTD. DOOR STOPS.
 

do we need latches? need some latch for double door - push, pull with closer for stage

no center post?

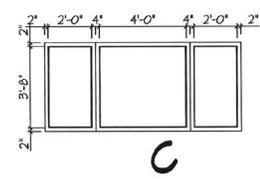
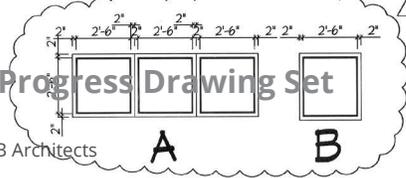
(match lobby doors?)

microm hinged



Window #	WINDOW						FRAMES						Fire Rating	Hdw. Group	REMARKS
	TYPE	MAT.	FIN.	SIZE			TYPE	MAT.	FIN.	DETAILS					
				WIDTH	HEIGHT	THICK				JAMB	HEAD	SILL			
W01	INSULATED	CLR GLASS	CLR GLASS	48"	30"	1"	A	FACTOR WHITE	FACTOR Y	2"	2"	2"			LOW-E
W02	INSULATED	CLR GLASS	CLR GLASS	30"	30"	1"	B	FACTOR WHITE	FACTOR Y	2"	2"	2"			LOW-E
W03	INSULATED	CLR GLASS	CLR GLASS	108"	48"	1"	C	FACTOR WHITE	FACTOR Y	2"	2"	2"			LOW-E

1) PROVIDE 15-YR. MANUFACTURERS GUARANTY FOR WINDOWS



2000 Progress Drawing Set

DRAWING INDEX						
DWG. NO.	SHEET TITLE	DATE ISSUED	REVISION 1	REVISION 2	REVISION 3	
	COVER SHEET	4/22/98	5/9/00			
A01	INDEX SHEET & SCHEDULES	4/22/98	5/9/00			
A11	FIRST & SECOND FLOOR PLANS	4/22/98	5/9/00			
A21	BUILDING ELEVATIONS	4/22/98	5/9/00			
S11	FOUNDATION & ROOF FRAMING	4/22/98	5/9/00			
S31	BUILDING SECTION A-A & DETAILS	4/22/98	5/9/00			
S32	BUILDING SECTION B-B	4/22/98	5/9/00			
S33	LONGITUDINAL BUILDING SECTION C-C & DETAILS	4/22/98	5/9/00			
M11	FIRST & SECOND FLOOR HVAC PLANS	3/12/98	7/14/00			
M12	HVAC SCHEDULES & DETAILS	3/12/98	7/14/00			
M13	HVAC SPECIFICATIONS	3/12/98	7/14/00			
F11	DETAILS, NOTES, & SCHEDULE	4/22/98	NOT USED			
F12	FIRST & SECOND FLOOR FIRE PROTECTION PLANS	4/22/98	NOT USED			
P11	FIRST & SECOND FLOOR PLUMBING PLAN	3/12/98	7/14/00			
P12	PLUMBING SCHEDULE & SPECIFICATIONS	3/12/98	7/14/00			
E11	LEGEND & SPECIFICATIONS	3/12/98	7/14/00			
E12	FIRST & SECOND FLOOR LIGHTING PLANS	3/12/98	7/14/00			
E13	FIRST & SECOND FLOOR POWER PLANS	3/12/98	7/14/00			
E14	DETAILS & SCHEDULES	3/12/98	7/14/00			

DESIGN DATA			
PROJECT NAME:	INDIAN HILL PERFORMANCE ARTS		
PROJECT NUMBER:	ME-1655		
LOCATION:	LITTLETON, MASSACHUSETTS		
APPLICABLE CODES:			
BUILDING:	780 CMR MASSACHUSETTS STATE BUILDING CODE, 6th EDITION (2/28/98)		
ELECTRICAL:	521 CMR MASSACHUSETTS ELECTRICAL CODE		
MECHANICAL:	780 CMR MASSACHUSETTS STATE BUILDING CODE, 6th EDITION (2/28/98)		
PLUMBING:	248 CMR MASSACHUSETTS PLUMBING CODE (6/3/94)		
ACCESSIBILITY:	521 CMR MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (2/23-98)		
DESIGN LIMITATIONS:			
USE GROUP:	A-3 (ASSEMBLY)		
TYPE OF CONSTRUCTION:	5B (COMBUSTIBLE-UNPROTECTED)		
SPRINKLER SYSTEM:	FULLY SPRINKLERED PER N.F.P.A. 13		
HEIGHT & AREA LIMITATIONS:			
	*TABULAR: 1 ST, 45', 11,541 SF		
	ACTUAL: 1 ST, 34', 1,232 SF		
OCCUPANT LOAD:			
	DESIGN: 483 OCC. PER SF BASED ON 15 SF/OCC.		
	ACTUAL: 110 OCC. BASED ON APPROVED SEPTIC FROM TOWN		
EXIT REQUIREMENTS:	(WITH SPRINKLER SYSTEM)		
NUMBER OF EXITS:	2 REQUIRED		
LENGTH OF TRAVEL:	250'		
WIDTH OF EXITS:			
	REQUIRED	PROVIDED	
	STAIRWAYS: 2 INCHESx40 OCC.	44"	48"
	DOORS: 15 INCHESx48 OCC.	73"	180"
	RAMP: PER ACCESSIBILITY CODE	48"	60"
	CORRIDORS: 15 INCHESx40 OCC.	44"	60"
FLAME SPREAD REQUIREMENTS:			
	CORRIDORS PROVIDING EXIT ACCESS: II	FLAMESPREAD INDEX 26-75	
	ROOMS OR ENCLOSED SPACES: III	FLAMESPREAD INDEX 15-200 (TABLE 803.4, NOTE B)	

\*Tabular values represent allowable exceptions\*

FINISH SCHEDULE														
ROOM #	NAME	FLOOR HD. NO.	BASE		North Wall		East Wall		South Wall		West Wall		CEILING HEIGHT	REMARKS
			FINISH	MAT.	FINISH	MAT.	FINISH	MAT.	FINISH	MAT.	FINISH	MAT.		
100	PERFORMANCE HALL	HD. NO. ASSEMBLY	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	19'-5"	42" MAINSCOT AT LOWER PART OF WALL. W/ CURTAINS ABOVE.
101	PLATFORM	HD. NO.	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	17'-8"	
102	STORAGE	HD. NO.	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	10'-5"	
103	P-2 STUDIO	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	9'-0"	
104	P-1 STUDIO	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	9'-0"	
105	TIMPANI	HD. NO. ASSEMBLY	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	9'-0"	
106	COVERED WALK	BRUSHED CONCRETE	PAINTED	WOOD									MDO	
107	VESTIBULE	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	CLEAR	GLASS	9'-0" w/	
108	STAIRS	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	
109	STORAGE	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	9'-0" w/	
200	STUDIO	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	8'-4"	
201	STUDIO	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	8'-4"	
202	STORAGE	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	8'-4"	
203	CONTROL ROOM	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	8'-4"	
204	HALLWAY	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	8'-4"	
205	STAIRS	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	
206	BALCONY	CARPET	PAINTED	WOOD	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	G.W.B.	PAINTED	

PROJECT: INDIAN HILL MUSIC CENTER  
LITTLETON, MA 01460

PROPOSED 1,232 SF PERFORMANCE HALL  
INDEX SHEET AND SCHEDULES

REVISIONS	DATE	SCALE	DRAWN BY	DESIGN BY
1	3/17/98	1/8" = 1'-0"	BTH	PKR/BTH
2	4/22/98			
3	5/9/2000			
4	7/14/2000			

GENERAL CONTRACTOR:

**MULLANEY CORPORATION**  
General Contractors, Design, Build  
Construction, Massachusetts  
35 South Street, Leominster, MA 01453 (905)537-8800

**McKENZIE ENGINEERING COMPANY, INC.**  
305 WHITNEY STREET LEOMINSTER, MA 01453  
TEL: 978-537-8210 FAX: 978-940-4147

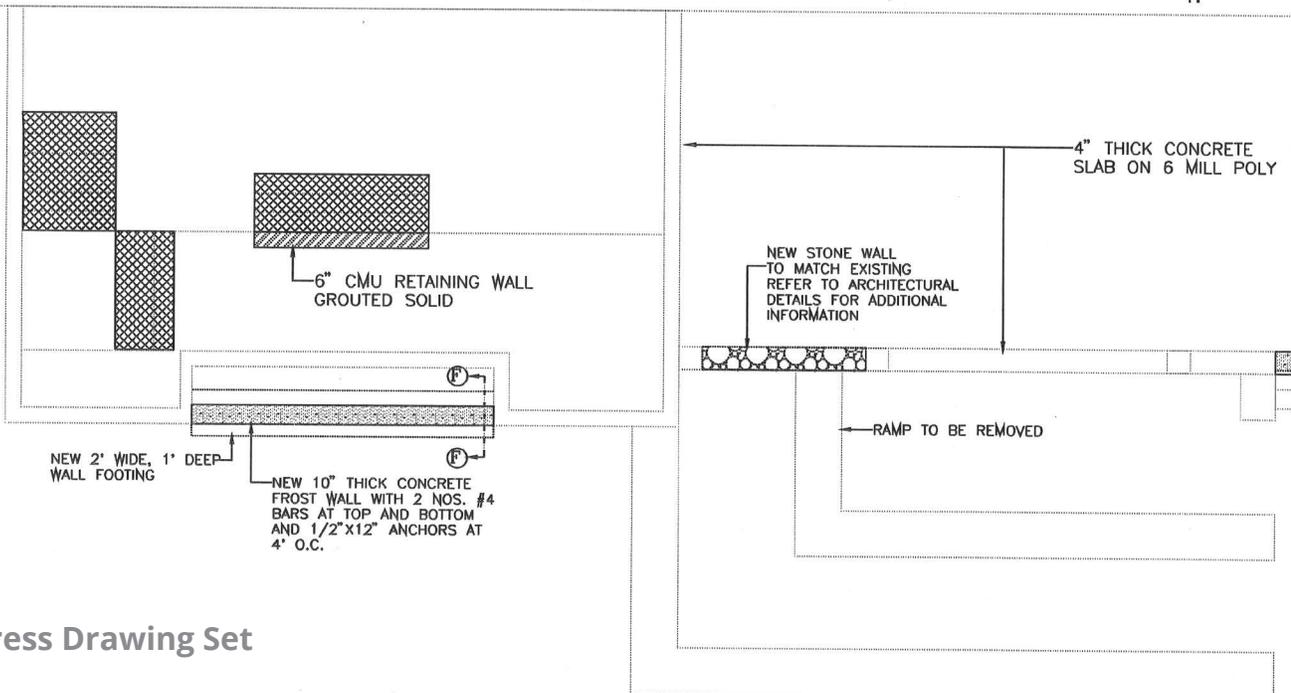
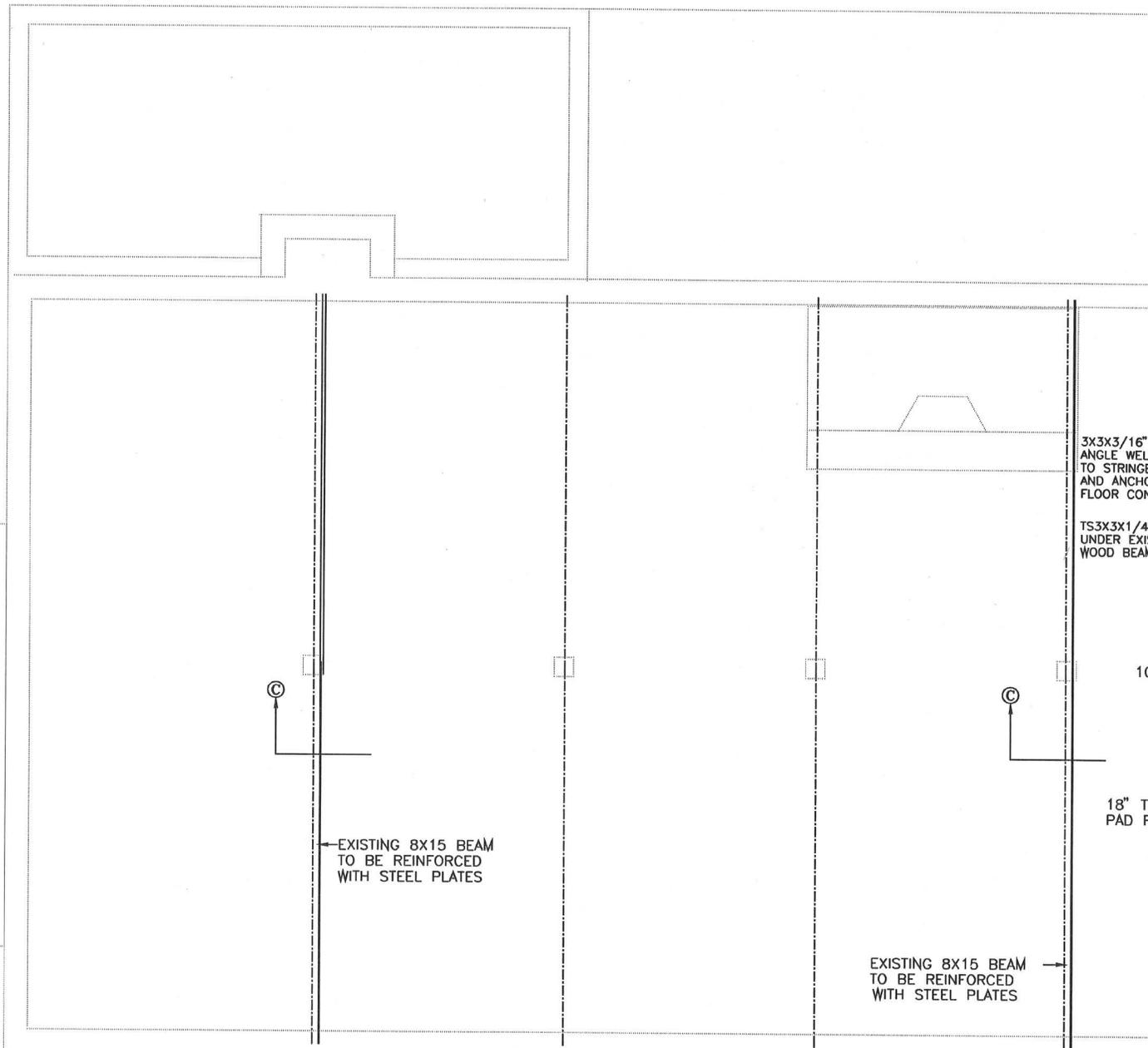
FILE: INDEX.DWG  
JOB# ME-1655

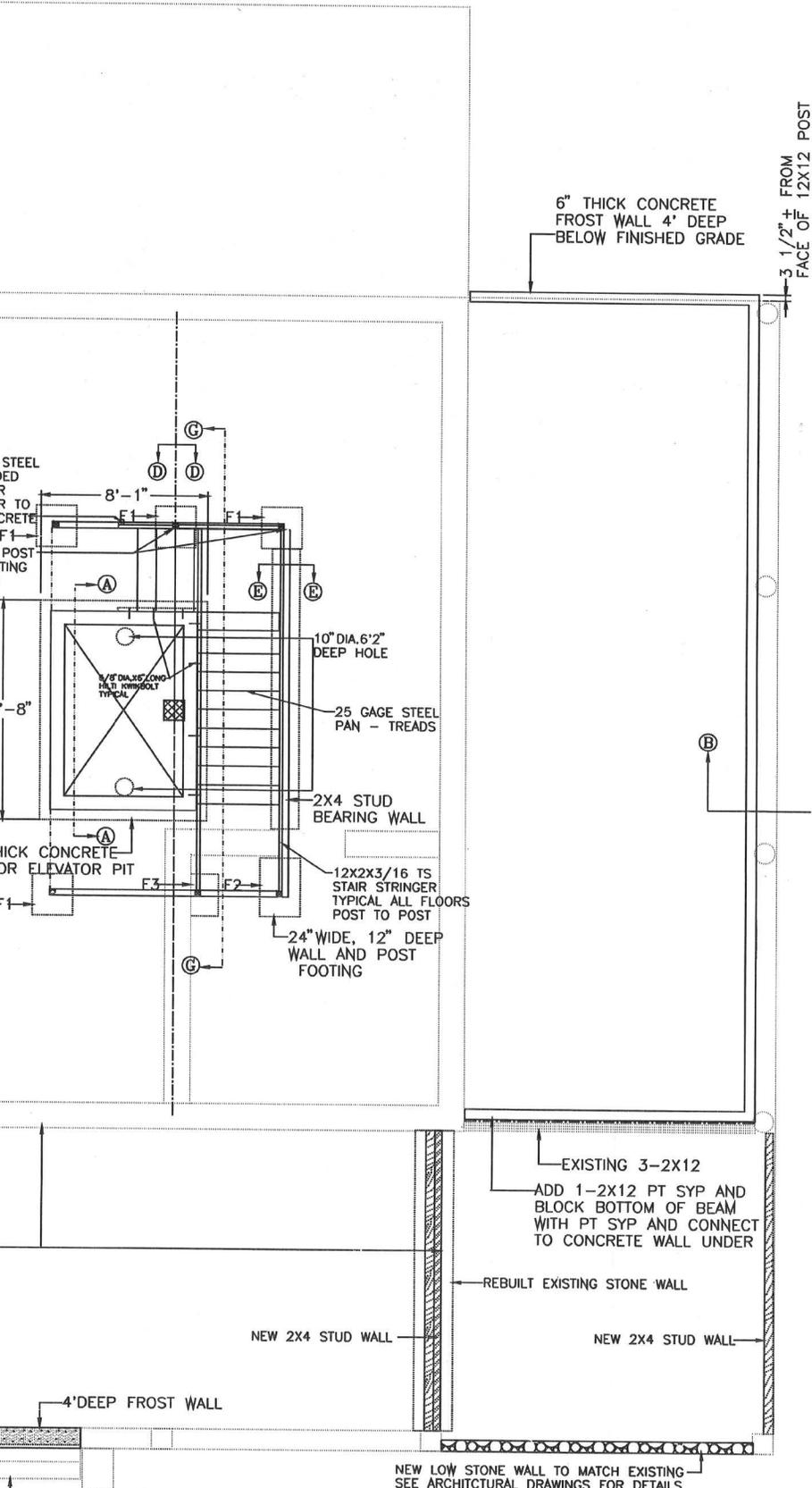
Drawings not to scale. Refer to original drawing set.

2

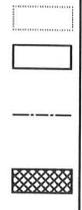






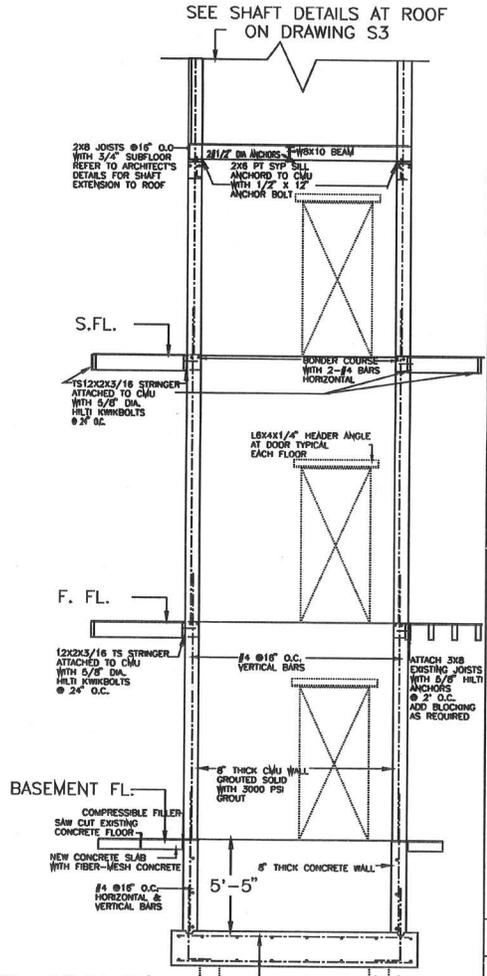


**NOTES:**  
 EXISTING STRUCTURE SHOWN AS:  
 NEW WORK SHOWN AS:  
 CENTER LINE OF STRUCTURAL MEMBERS SHOWN AS:  
 EXISTING STRUCTURE TO BE REMOVED SHOWN AS:  
 SEE ALL SECTION DETAILS ON DRAWING S4



**INDIAN HILL ARTS**  
 38 KING STREET, LITTLETON, MA 01460

The Office of Michael Rosenfeld, Inc., Architects  
 543 Massachusetts Avenue, West Acton, MA 01720  
 Kanayo Lala, P.E.  
 Four West Road, West Acton, MA 01720  
 Tel./Fax: (908) 263-1472; E-Mail: Kanayo@AOL.COM



STEPS TO BE REWORKED FOR DETAILS REFER ARCHITECT'S DRAWINGS

Drawing not to scale. Refer to original drawing set.  
 #5 - 18" O.C. BOTTOM BARS BOTH WAYS

**SECTION AA**

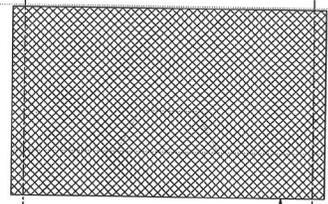
REV. NO.	DATE	DESCRIPTION
1	10/24/95	FOR CONSTRUCTION

TITLE	FOUNDATION PLAN & SECTIONS
JOB No.	9424
DRAWING No.	S1
DATE	SEPT 24, 1995
SCALE	N.T.S.
CHECKED	KL
DRAWN	KL
DATE	SEPT 24, 1995
BY	KL

RELOCATED POST

EXISTING POST TO BE REMOVED TO ALLOW NEW DOOR



REMOVE STONE CHIMNEY TO UNDERSIDE OF FLOOR FRAMING AND FILL OPENING IN FLOOR WITH 2X8 AT 12" O.C. AND 3/4" T&G CDX STC II PLY

TS3X3X1/4 P UNDER EXISTING WOOD BEAM

1 3/4" X 7 1/2" BOLTED TO CMU

8" THICK WALL FOR ATTACH PSL TO POST WITH 2X8S-4X4S THRU BOLTS

12" X 2" X 3/1" STRINGER T

EXISTING WOOD POSTS ABOVE

EXISTING GRANITE POSTS BELOW

EXISTING WOOD POSTS ABOVE

PROVIDE U212 JOIST HANGERS AND BLOCK WITH 2X12 LEDGER. LEDGER MUST BE ATTACHED TO EXISTING FLOOR BEAM WITH 1/2" DIA. 8" LONG LAGS AT 16" O.C.

1x3 CROSS BRIDGING

NEW 1X3 CROSS BRIDGING FOR EXISTING JOISTS

EXISTING JOISTS 2X12 @16" O.C. REMOVE DECKING & REPLACE WITH 3/4" T&G CDX STC II 32/16 PLYWOOD GLUED AND NAILED TO JOISTS

ADD 2-2X3/4" CDX AT EVERY ABOVE, WITH U212-2

2X6 STUD BEARING WALL ABOVE (EXISTING)

NEW 2X12 @12" O.C. FLOOR JOISTS

2X12 @12" O.C.

2X12 @12" O.C. FLOOR JOISTS WITH GLUED & NAILED 3/4" SUBFLOOR

2X12 @12" O.C.

EXISTING SHELF ABOVE GLASS DOOR TO BE REMOVED

2-2X12 BAND JOISTS

2X6 STUD BEARING WALL BELOW

PROVIDE SHORING UNDER GLASS DOOR

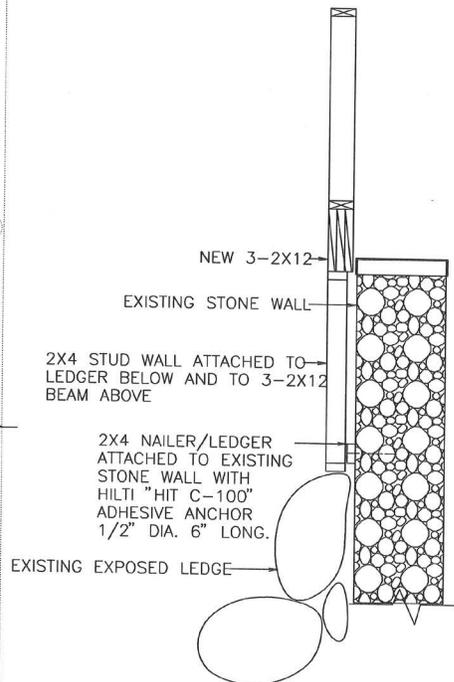
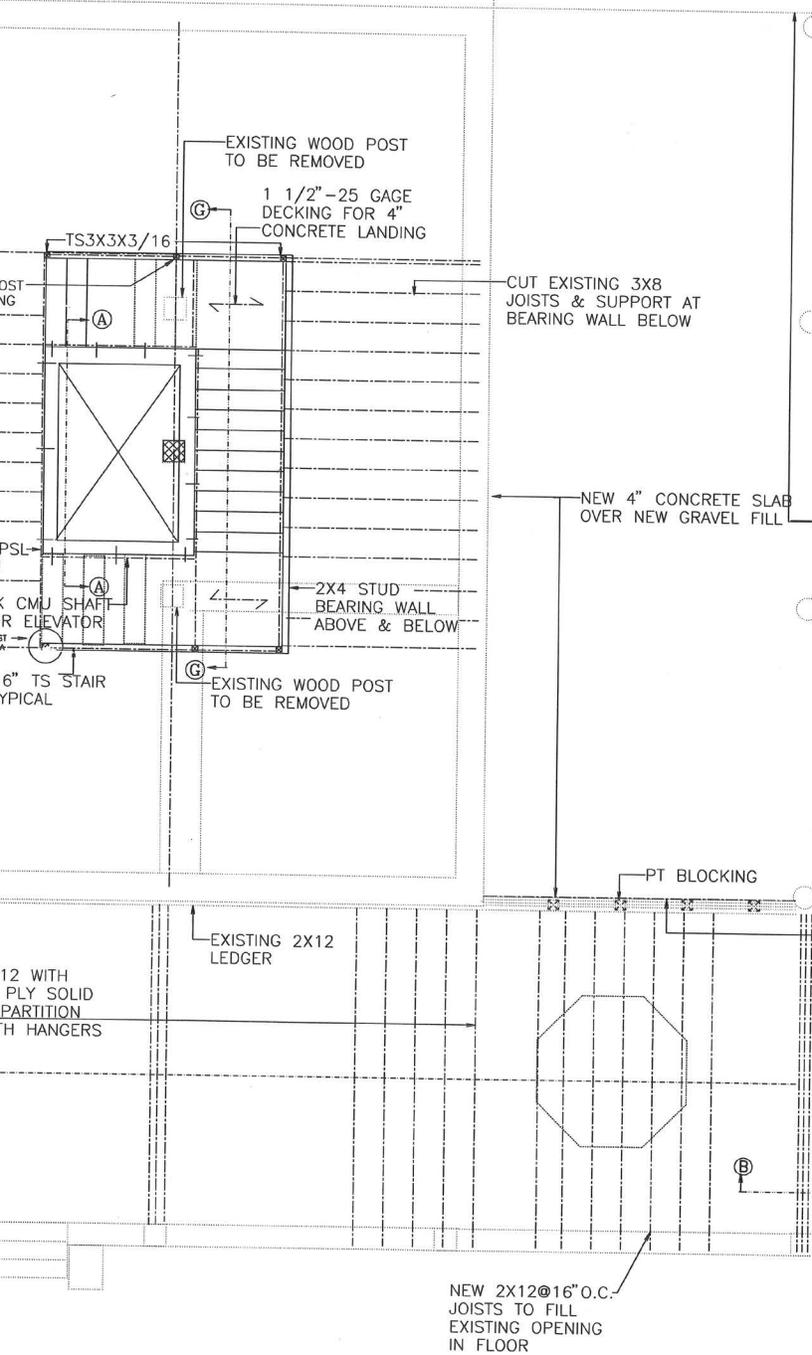
# SECTION C

POST

NEW POST

EXISTING POST TO BE REMOVED TO ALLOW NEW WINDOW

REMOVE FINISHES TO EXPOSE STRUCTURAL MEMBERS AND THEN CONSULT ENGINEER FOR CONNECTION DETAILS



SECTION BB  
SCALE: 3/4" = 1'

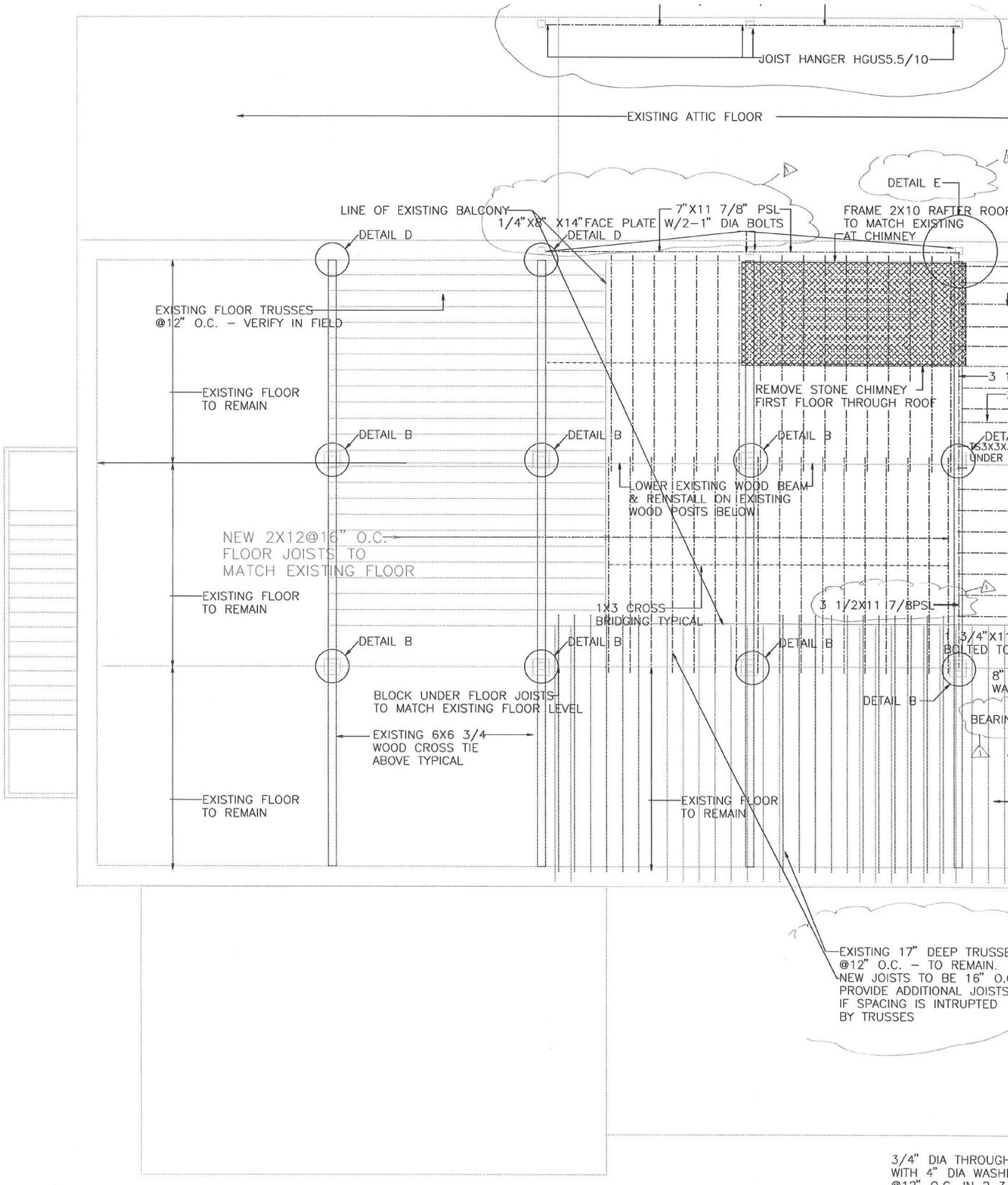
INDIAN HILL ARTS  
38 KING STREET, LITTLETON, MA 01460

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543 Massachusetts Avenue, West Acton, MA 01720  
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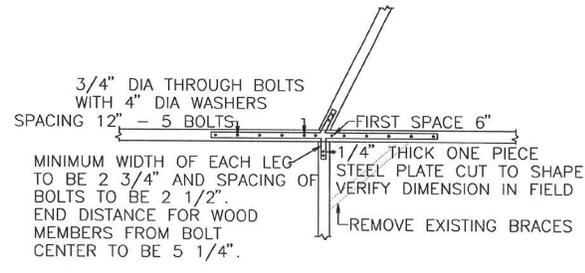
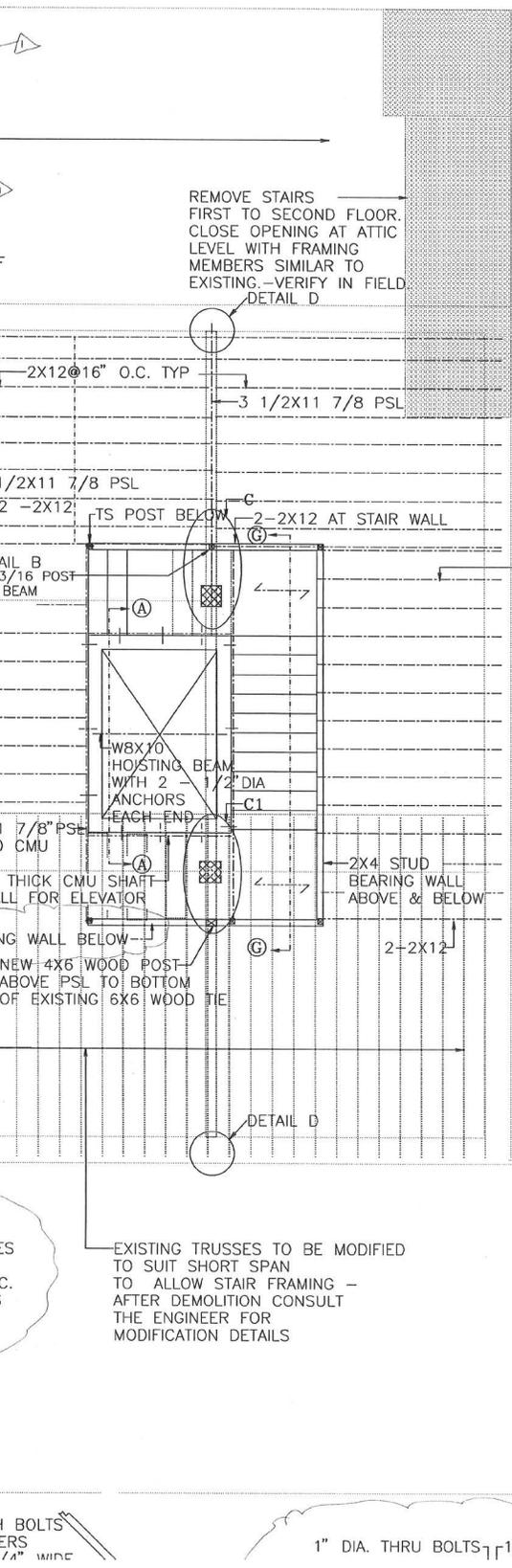
REV. NO.	DATE	DESCRIPTION
1	10/31/11	Per 10/5/11 REVISION

TITLE		DRAWN		CHECKED	
FIRST FLOOR FRAMING		KL	KL		
DATE	SCALE	N.T.S.			
SEPT/20/1995					
JOB No. 9424					
DRAWING No. 02					

Drawings not to scale. Refer to original drawing set.

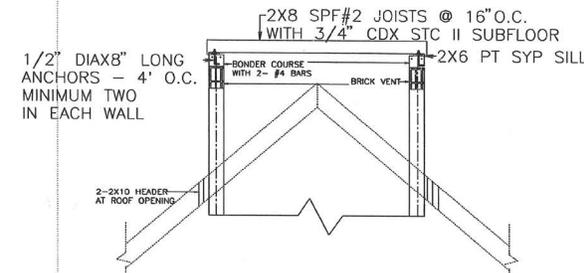


2000 Progress Drawing Set

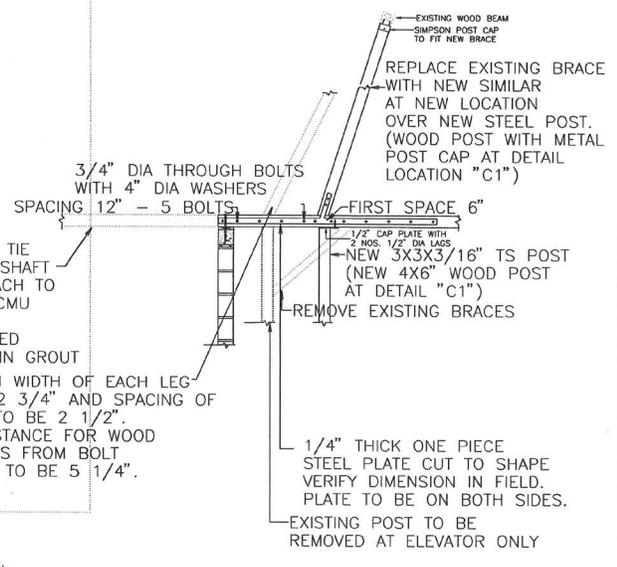


TYPICAL CONNECTION AT POST CROSS TIE AND ROOF RAFTER WOOD BRACING PROVIDE AT ALL BRACINGS

DETAIL B



SECTION AA THROUGH ELEVATOR SHAFT



INDIAN HILL ARTS

38 KING STREET, LITTLETON, MA 0146C

The Office of Michael Rosenfeld, Inc., Architects  
543 Massachusetts Avenue, West Acton, MA 01720

Kanayo Lala, P.E.  
Four West Road, West Acton, MA 01720  
Tel./Fax: (508) 263-1472; E-Mail: Kanayo@AOL.COM

REV.	DATE	DESCRIPTION
1	10/27/07	AREA MARKED

FLOOR FRAMING

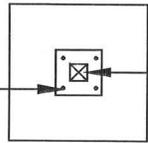
SCALE: N.T.S.

DRAWN: KL

CHECKED:

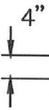
Drawings not to scale. Refer to original drawing set.

4 NOS. 1/2" DIA  
6" LONG HILTI  
KWIKBOLTS



TS 3X3X1/4"  
POST WITH 1/2" THICK  
8"X8" BASE AND CAP  
PLATES

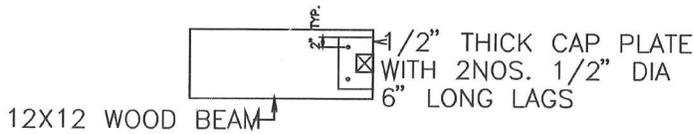
NEW SLAB OVER 6 MILL POLY



FILL CRAWL SPACE WITH GR  
1" RIGID INSU

NEW FROST

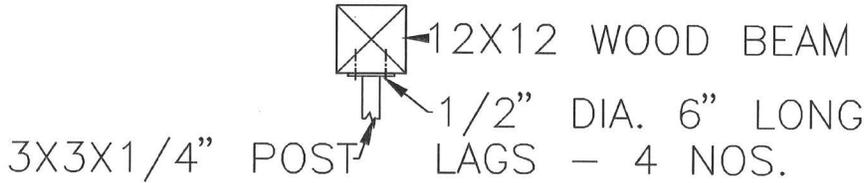
DETAIL AT FOOTING F1



PLAN VIEW OF POST CAP PLATE

EXISTING SONA

SECTION



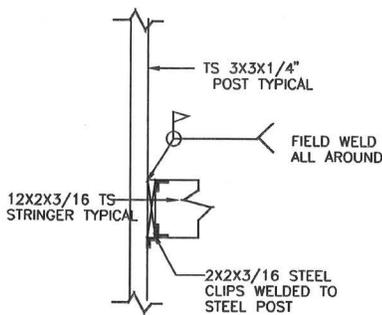
POST & BEAM CONNECTION

SECTION DD

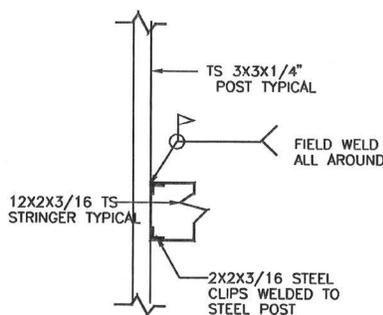
3/4" DIA. THRO  
BOLTS @ 9"  
TWO ROWS

1/4" THICK, 14" WIDE STEEL PLA  
LAGGED TO WOOD BEAM  
ENTIRE LENGTH OF BEAM  
BUTT JOINT TWO PLATES  
AT THE CENTER OF  
GRANITE POST

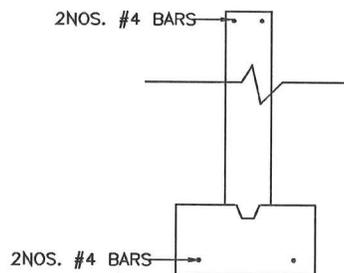
SECTIO



TYPICAL POST & STRINGER  
CONNECTION



TYPICAL POST & STRINGER  
CONNECTION



2X6 PT SYP SILL  
WITH 1/2" DIA. 12" LONG  
ANCHORS @ 6' O.C.

2" WIDE, 1' DEEP  
WALL FOOTING

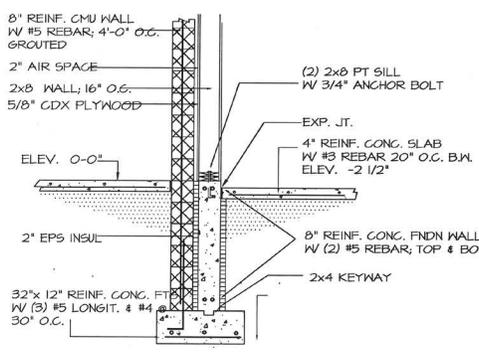
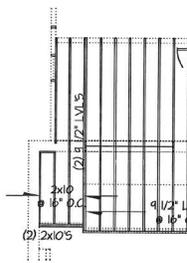
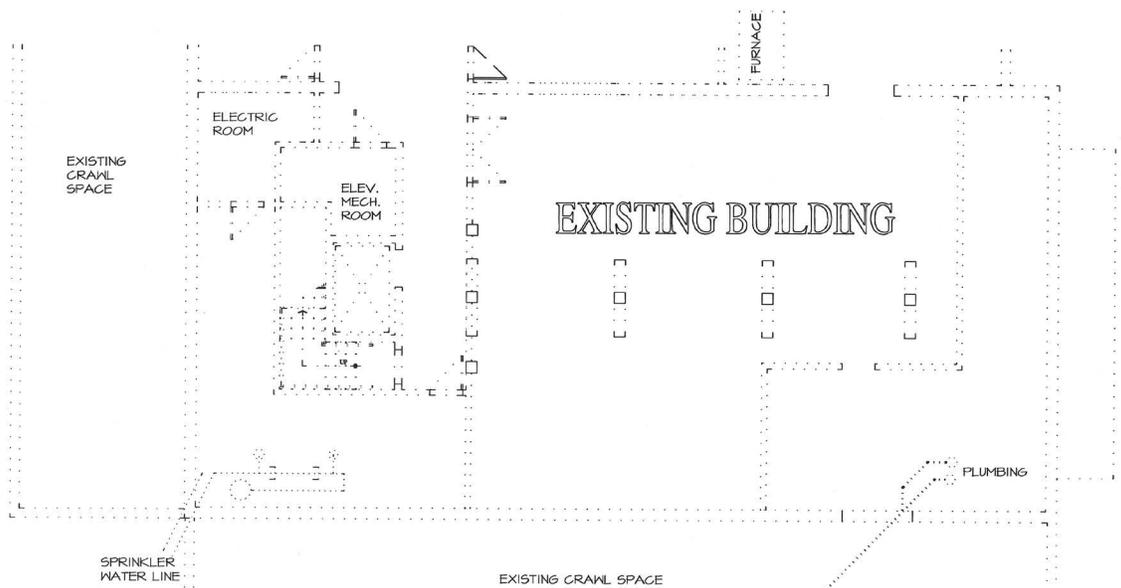
2 NOS. #4 BARS

SECTION F/S1

SEC

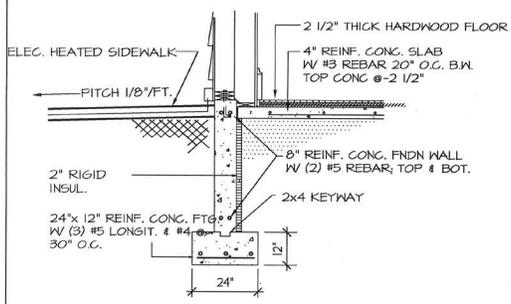
DETAIL H/S4 DETAIL J/S4





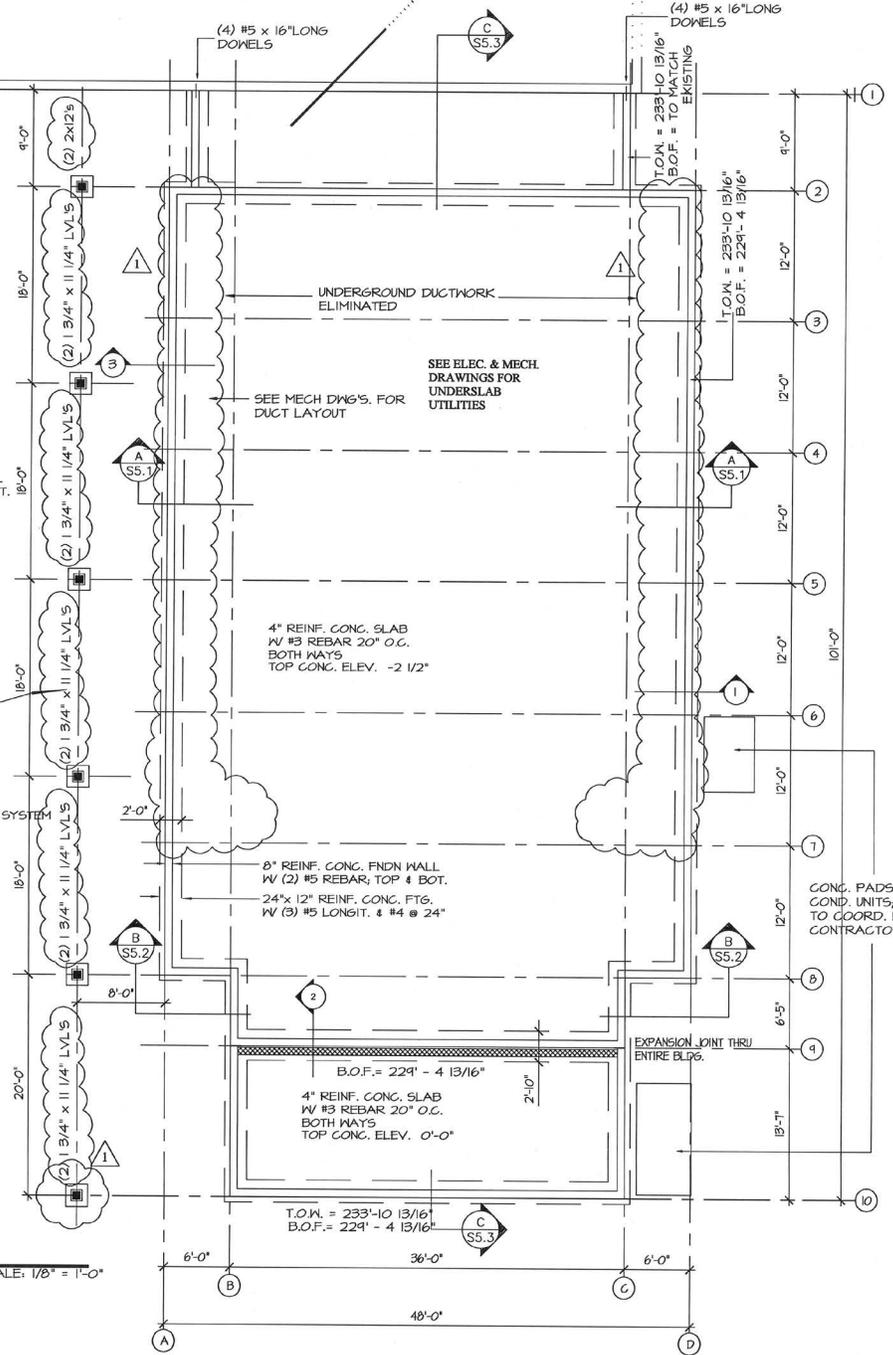
**SECTION DETAIL #2**

SCALE: 3/8" = 1'-0"



**SECTION DETAIL #3**

SCALE: 3/8" = 1'-0"

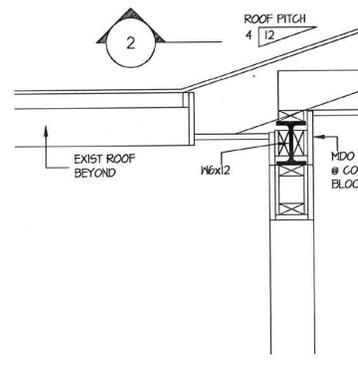
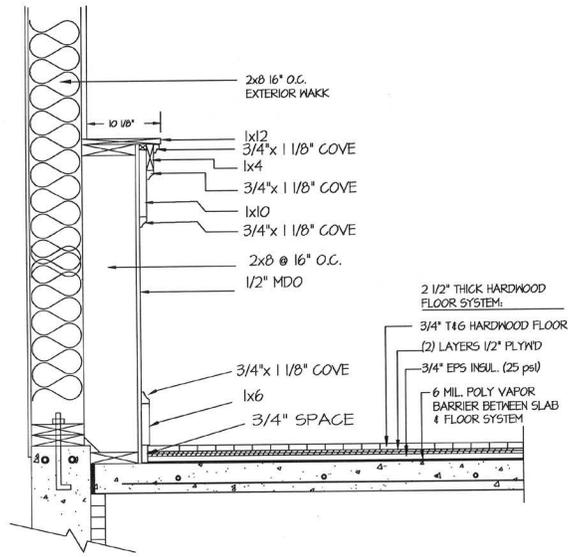


**FOUNDATION PLAN**

2000 Progress Drawing Set

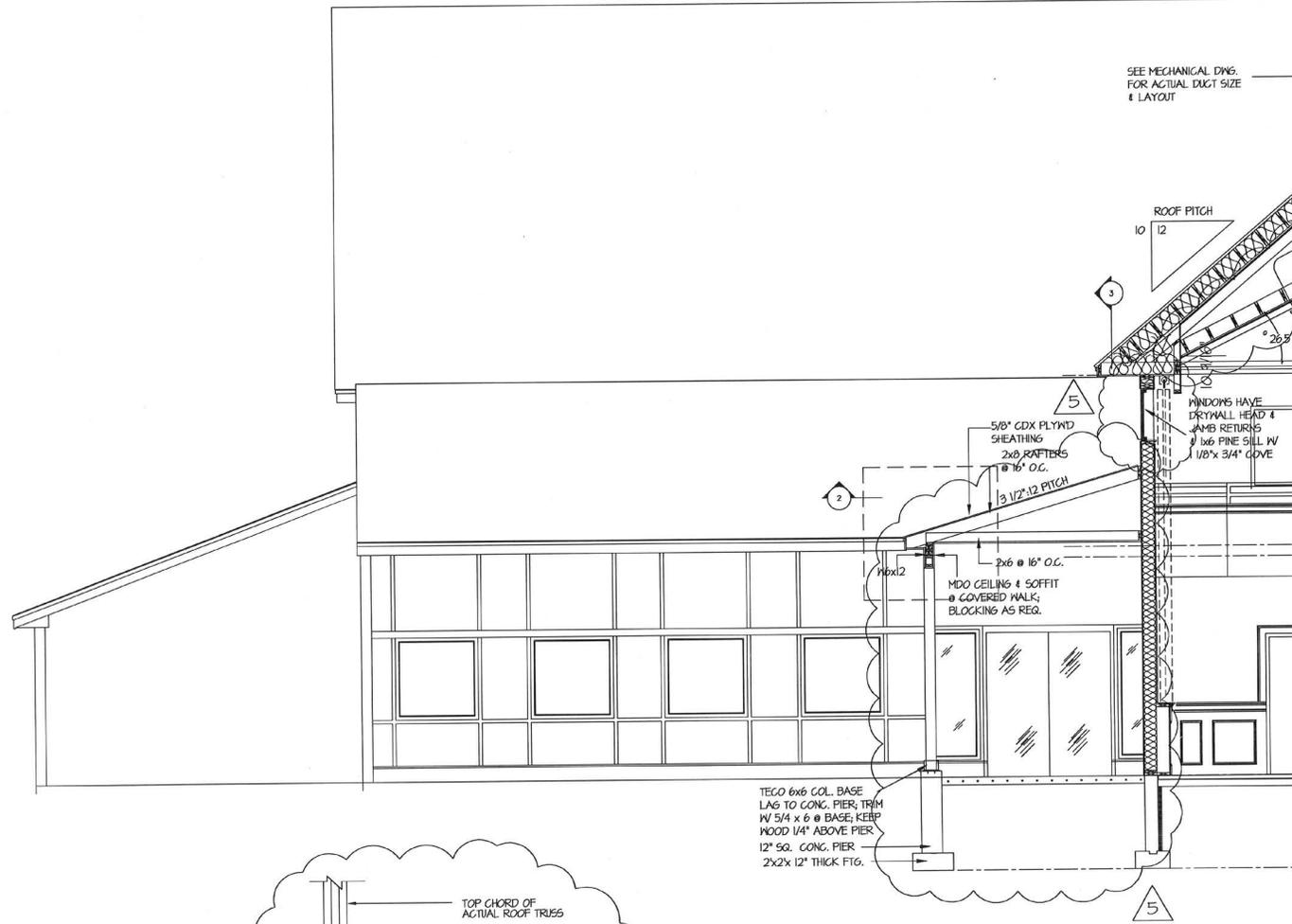
SCALE: 1/8" = 1'-0"



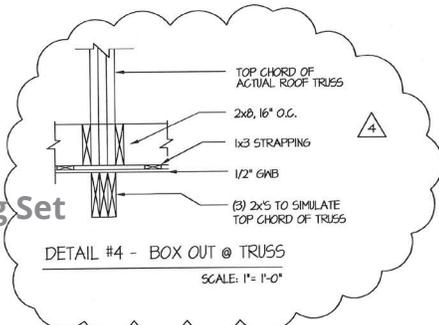


DETAIL #2 - SOFFIT @ COVERED WALK  
SCALE

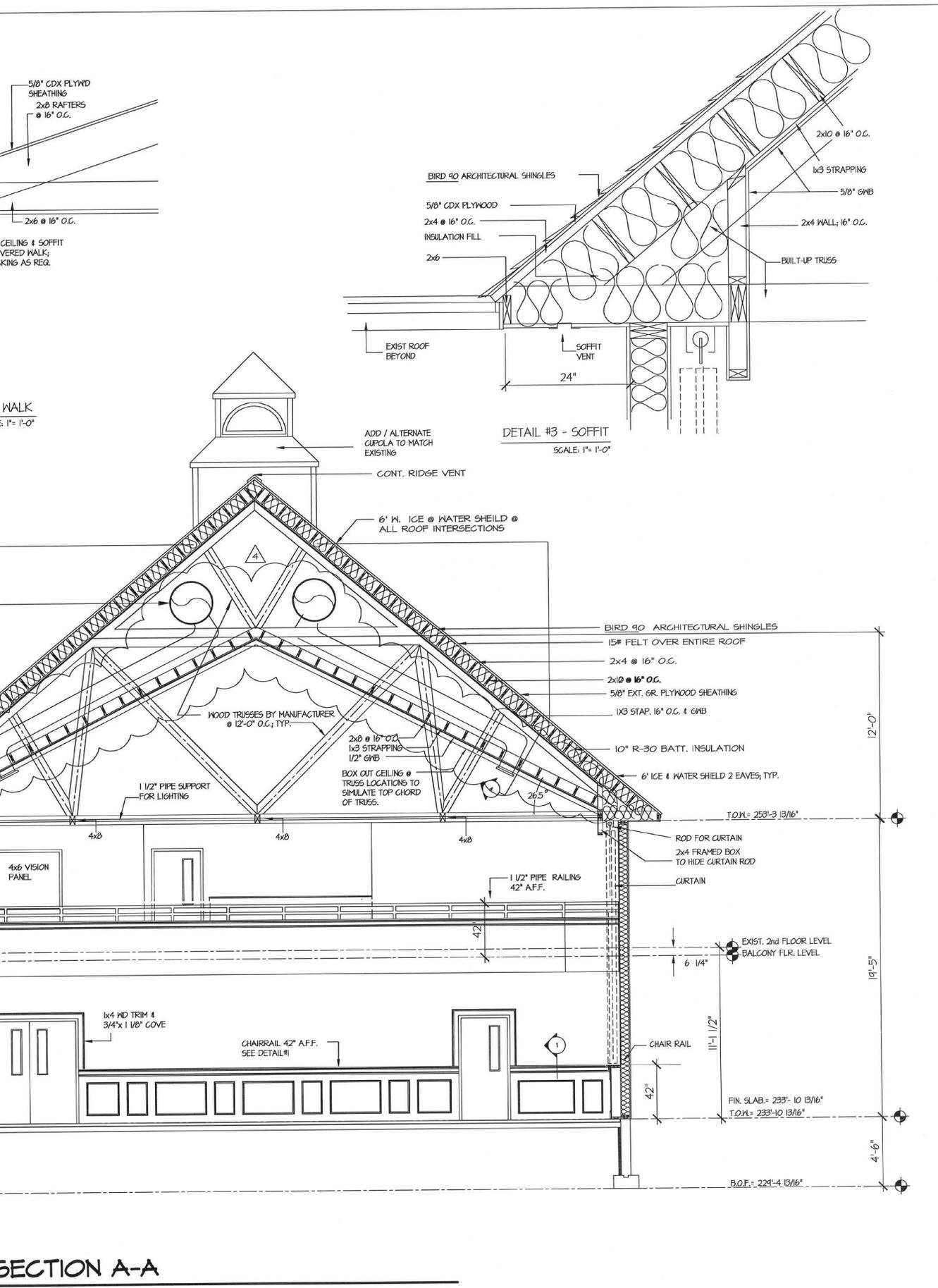
DETAIL #1 - @ PERFORMANCE HALL  
SCALE: 1" = 1'-0"



SEE MECHANICAL DNG. FOR ACTUAL DUCT SIZE & LAYOUT



DETAIL #4 - BOX OUT @ TRUSS  
SCALE: 1" = 1'-0"



SECTION A-A

SCALE: 1/4" = 1'-0"

PROJECT:  
**INDIAN HILL MUSIC CENTER**  
 LITTLETON, MA 01460  
 PROPOSED 7,232 SF PERFORMANCE HALL  
 BUILDING SECTION A-A & DETAILS

REVISIONS
1. 3/17/06 P.D. DWGS
2. 2/22/06 ISSUE DATE
3. 4/21/2000
4. 5/31/2000
5. 7/4/2000 GENERAL

DATE: 03/03/98  
 SCALE: AS NOTED  
 DRAWN BY: BTH/JPL  
 DESIGN BY: PMR/BTH

GENERAL CONTRACTOR:  
**MULLANEY CORPORATION**  
 General Contractors, Design Build  
 Construction Management  
 38 School Street, Leominster, MA 01453 (508)537-8900

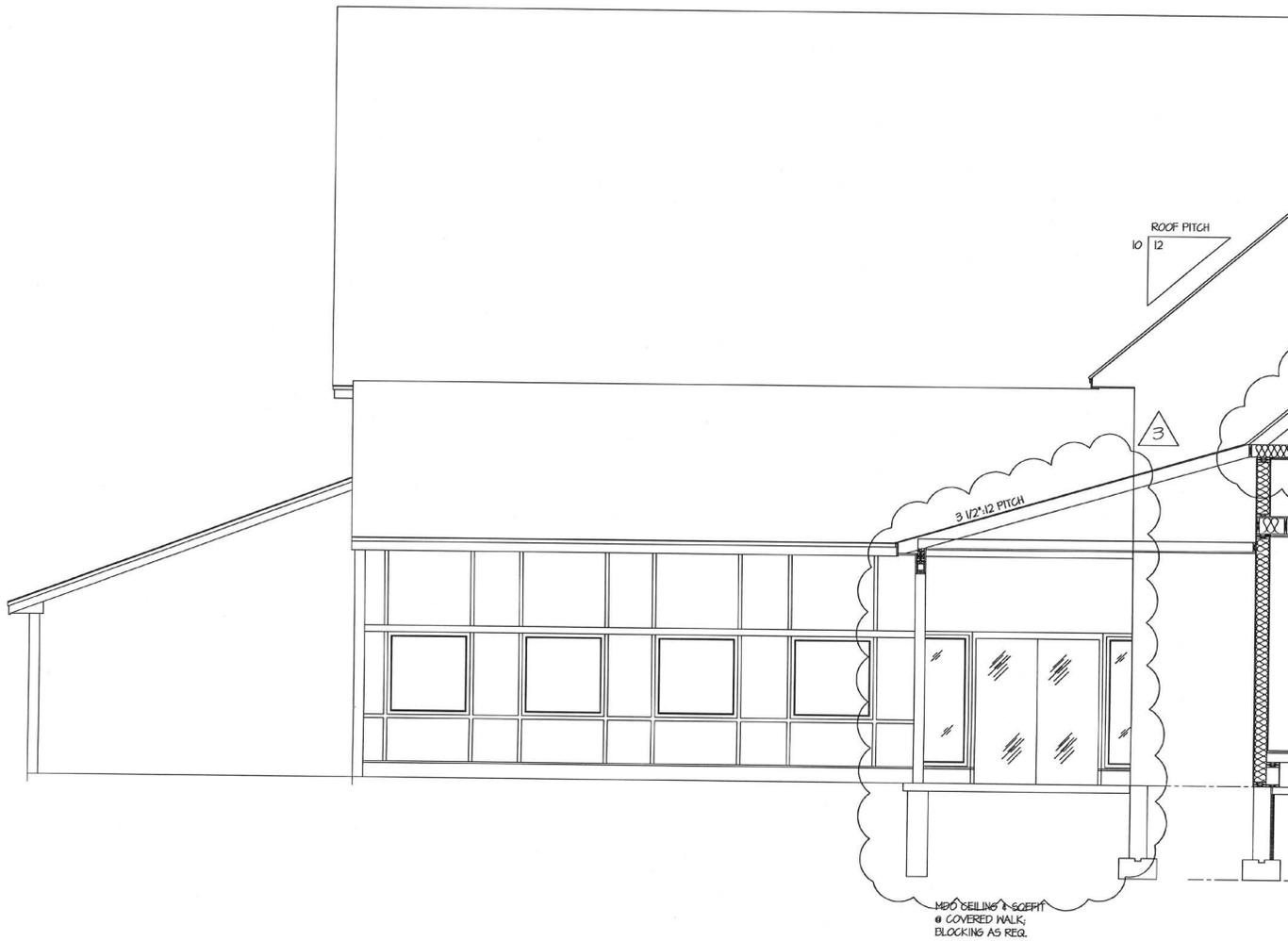
**MCKENZIE ENGINEERING COMPANY, INC.**  
 305 WHINEY STREET LEOMINSTER, MA 01453  
 TEL: 978-537-8210 FAX: 978-540-4147

FILE: SCTN.DWG  
 JOB# ME-1655

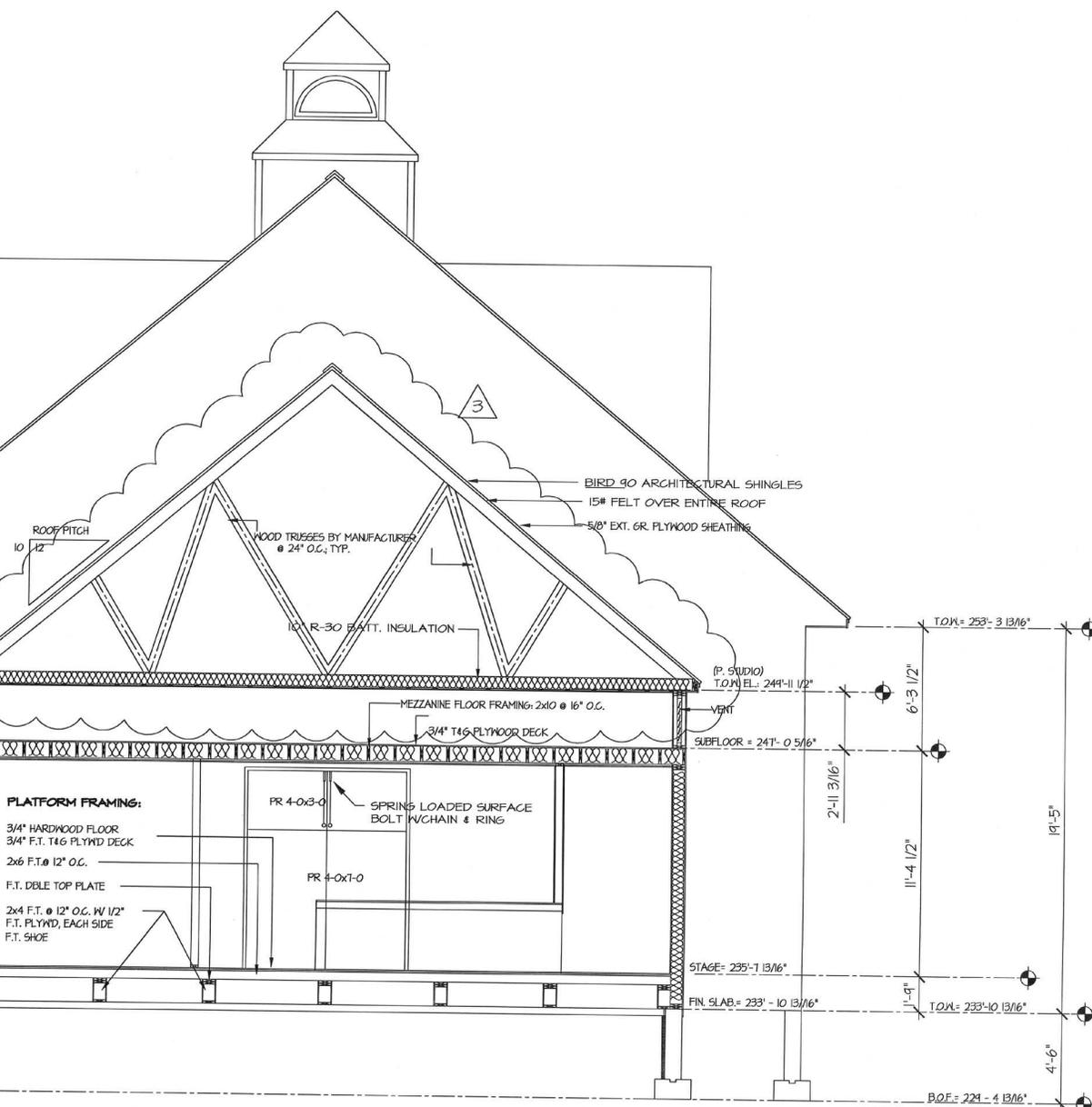
Drawings not to scale. Refer to original drawing set.

Indian Hill 36 King St. Existing Conditions Report

**S3.1**



**SECTION B-B**



SCALE: 1/4" = 1'-0"

PROJECT: INDIAN HILL MUSIC CENTER  
LITTLETON, MA 01460

PROPOSED 7,232 SF PERFORMANCE HALL  
BUILDING SECTION B-B

DATE:	REVISIONS
03/03/98	1. 3/17/98 DD, DWG
SCALE: 1/4" = 1'-0"	2. 4/22/98 152JE SET
DRAWN BY: BTH/JPL	3. 7/14/00 6ERHAL
DESIGN BY: PMR/BTH	

GENERAL CONTRACTOR:

**MULLANEY CORPORATION**  
General Contractors, Design Build  
Construction Management  
35 School Street, Leominster, MA 01453 (508)337-8800

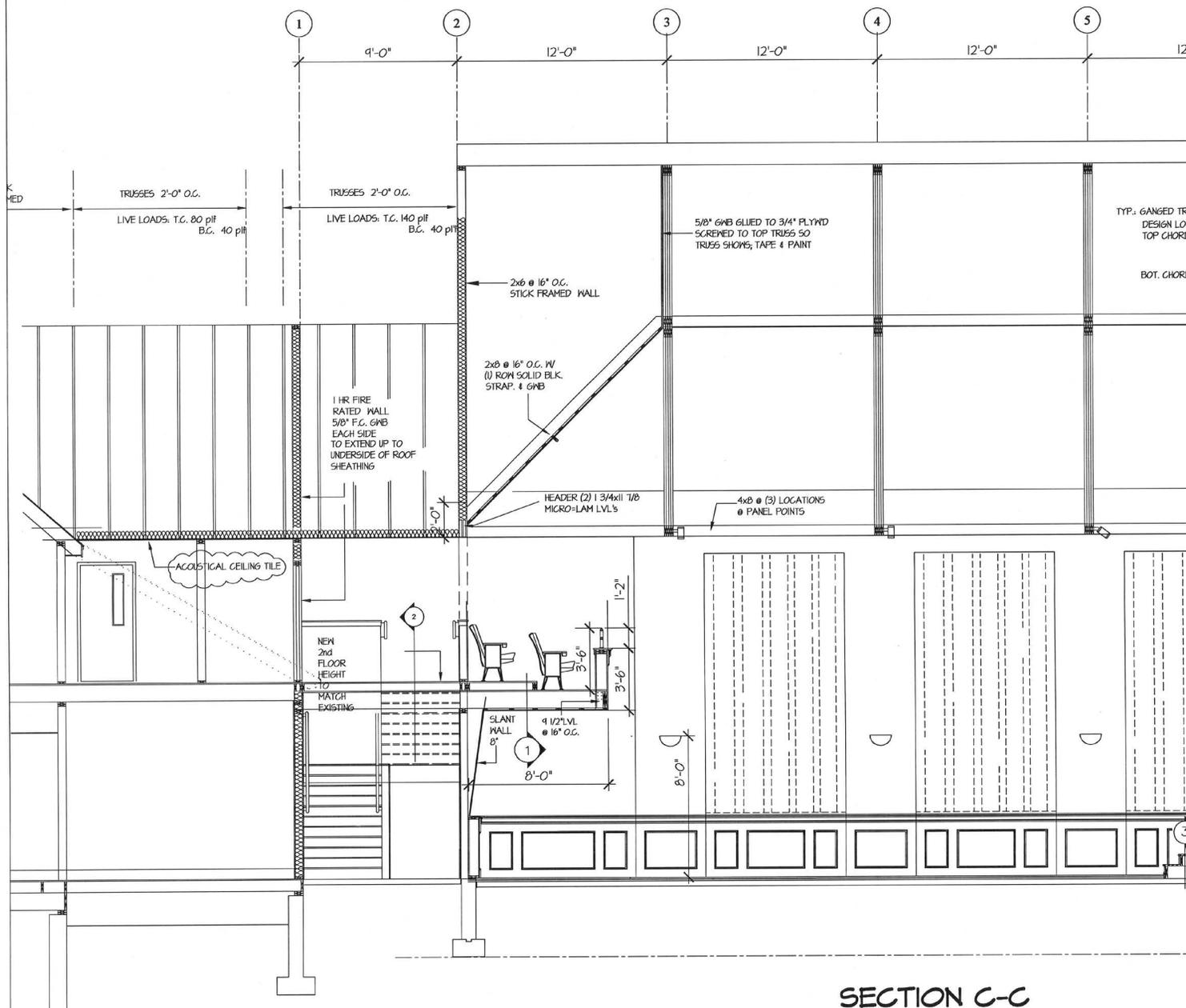
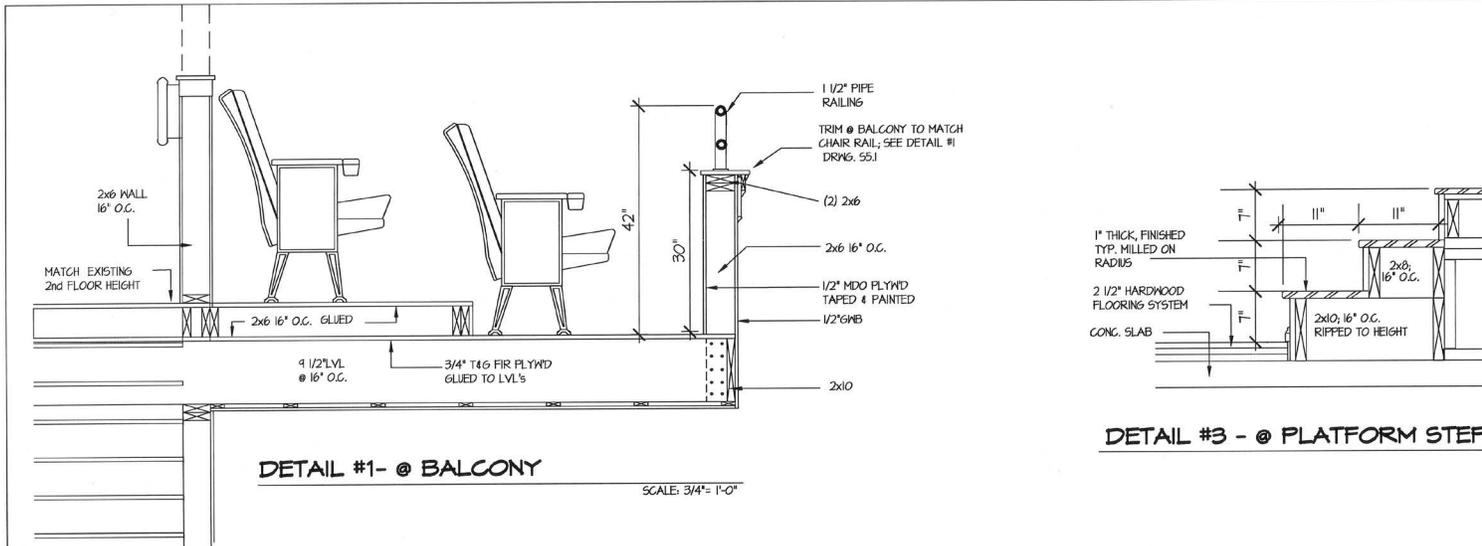
**MCKENZIE ENGINEERING COMPANY, INC.**  
305 WHITNEY STREET, LEOMINSTER, MA 01453  
TEL: 978-537-8210 FAX: 978-540-4147

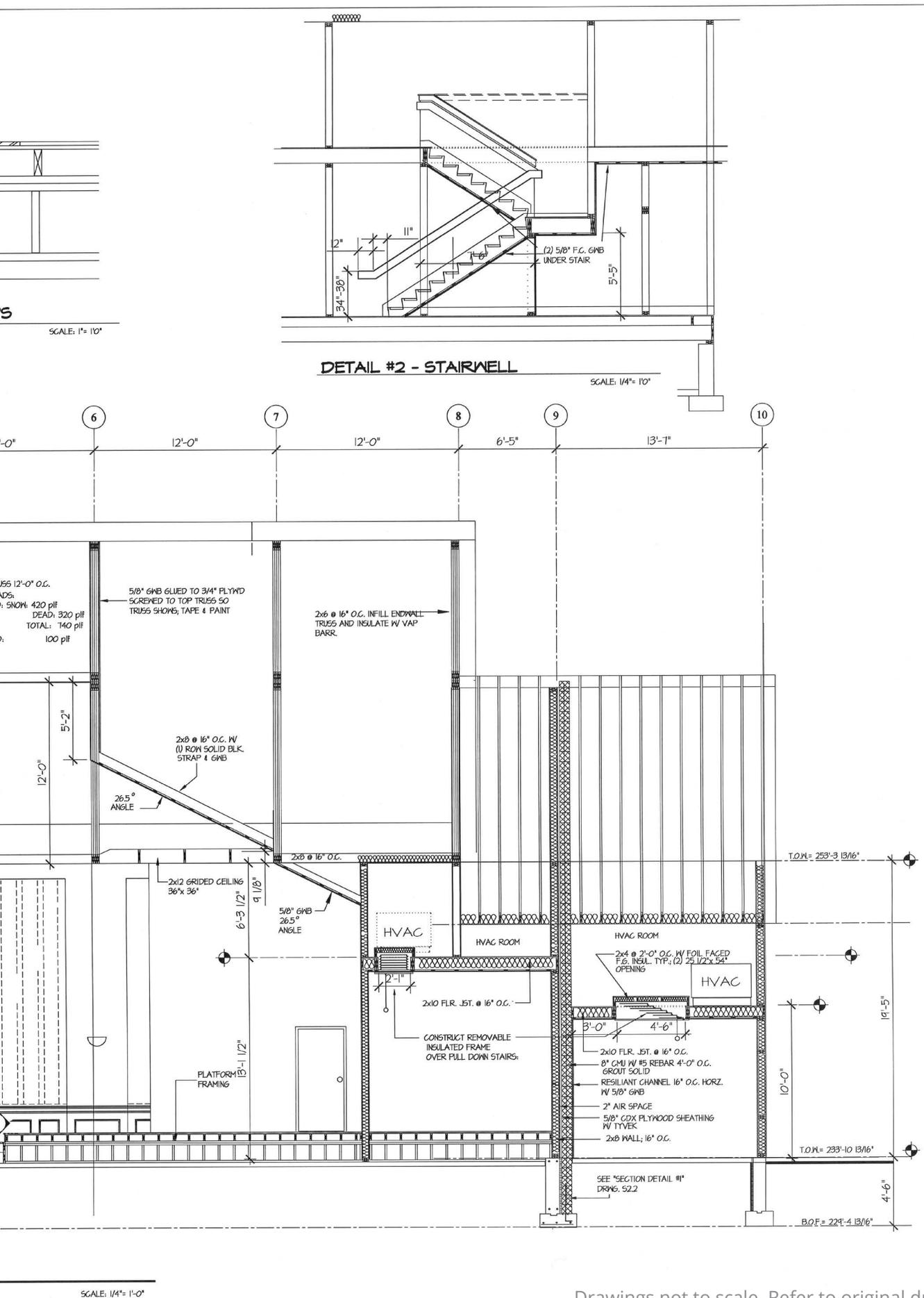
FILE: SCTN.DWG  
JOB# ME-1655

Drawings not to scale. Refer to original drawing set.

Indian Hill 36 King St. Existing Conditions Report

532





SCALE: 1" = 10"

DETAIL #2 - STAIRWELL

SCALE: 1/4" = 10"

SCALE: 1/4" = 1'-0"

PROJECT: INDIAN HILL MUSIC CENTER  
LITTLETON, MA 01460

PROPOSED 7,232 SF PERFORMANCE HALL  
LONGITUDINAL BLDG. SECTION C-C AND DETAILS

DATE:	REVISIONS
03/03/98	1 3/11/98 D.D. DW65
SCALE: AS NOTED	2 4/22/98 156AE SET
DRAWN BY: BTH/JPL	3 4/21/2000
DESIGN BY: PMR/BTH	

GENERAL CONTRACTOR:

**MULLANEY CORPORATION**  
General Contractors, Design Build  
Construction Management

36 School Street, Leominster, MA 01453 (508)337-8900

**McKENZIE ENGINEERING COMPANY, INC.**

305 WHITNEY STREET LEOMINSTER, MA 01453  
TEL: 878-537-8210 FAX: 878-840-4147

FILE: SCTN.DWG  
JOB# ME-1655

Drawings not to scale. Refer to original drawing set.



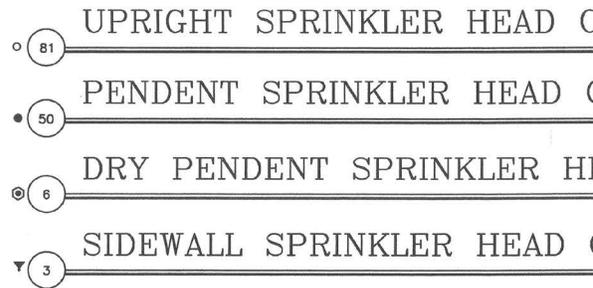
PIPE SCHEDULE							
NOMINAL PIPE PIPE SIZE (inches)	OUTSIDE DIAMETER (inches)	SCHEDULE 10		SCHEDULE 30		SCHEDULE 40	
		INSIDE DIAMETER (inches)	WALL THICKNESS (inches)	INSIDE DIAMETER (inches)	WALL THICKNESS (inches)	INSIDE DIAMETER (inches)	WALL THICKNESS (inches)
1/2"	0.840	---	---	---	---	0.824	0.109
3/4"	1.050	---	---	---	---	0.824	0.113
1"	1.315	---	---	---	---	1.049	0.133
1 1/4"	1.660	---	---	---	---	1.380	0.140
1 1/2"	1.900	---	---	---	---	1.610	0.145
2"	2.375	---	---	---	---	2.067	0.154
2 1/2"	2.875	2.635	0.120	---	---	2.469	0.203
3"	3.500	3.260	0.120	---	---	3.068	0.216
3 1/2"	4.000	3.760	0.120	---	---	3.548	0.226
4"	4.500	4.260	0.120	---	---	4.026	0.237
6"	6.625	6.357	0.134 SQ.	---	---	---	---
8"	8.625	8.249	0.188 SQ.	8.071	0.277	---	---
10"	10.750	10.370	0.188 SQ.	10.14	0.307	---	---

SPRINKLER SYMBOL DESCRIPTION							
SYMBOL	SIZE	MODEL	MAKE	FINISH	STYLE	TEMP	K-FACTOR
○	1/2"	M QR	VIKING	SEE BELOW	UPRIGHT	175°	5.5
●	1/2"	M QR	VIKING	SEE BELOW	PENDENT	175°	5.5
▽	1/2"	M QR	VIKING	SEE BELOW	SIWALL	175°	5.5
⊙	1/2"	M FUS.	VIKING	SEE BELOW	PENDENT	175°	5.5
BUILDING TOTAL 140							
ABBREVIATION LEGEND		QR = QUICK RESPONSE					
		FUS. = FUSIBLE LINK					
ALL EXPOSED UPRIGHT SPRINKLER HEADS TO BE FACTORY PAINTED WHITE. ALL SPRINKLER HEADS SHALL BE INSTALLED AFTER ALL PIPING HAS BEEN PAINTED TO MATCH SURROUNDING AREA. ALL JOINTS LEFT OPEN FOR SPRINKLER HEADS SHALL BE CAPPED BY A THREADED CAP OF EQUAL SIZE OF THE SPRINKLER HEAD. DO NOT TAPE SHUT THE SPRINKLER CONNECTIONS FOR PAINT PROTECTION. IF ANY PAINT ENTERS THE PIPE AND/OR FITTING(S), THE PIPE AND/OR FITTING(S) SHALL BE REPLACED AND AN NEW PIPE AND/OR FITTING(S) SHALL BE INSTALLED.							
ALL NON-EXPOSED UPRIGHT SPRINKLER HEADS SHALL BE FACTORY CHROME PAINTED.							
ALL EXPOSED PENDENT AND SIWALL SPRINKLER HEADS SHALL BE FACTORY PAINTED WHITE. ANY PIPING THAT NEEDS TO BE PAINTED SHALL BE DEALT WITH IN THE SAME MANNER AS DESCRIBED ABOVE FOR EXPOSED UPRIGHT HEADS.							

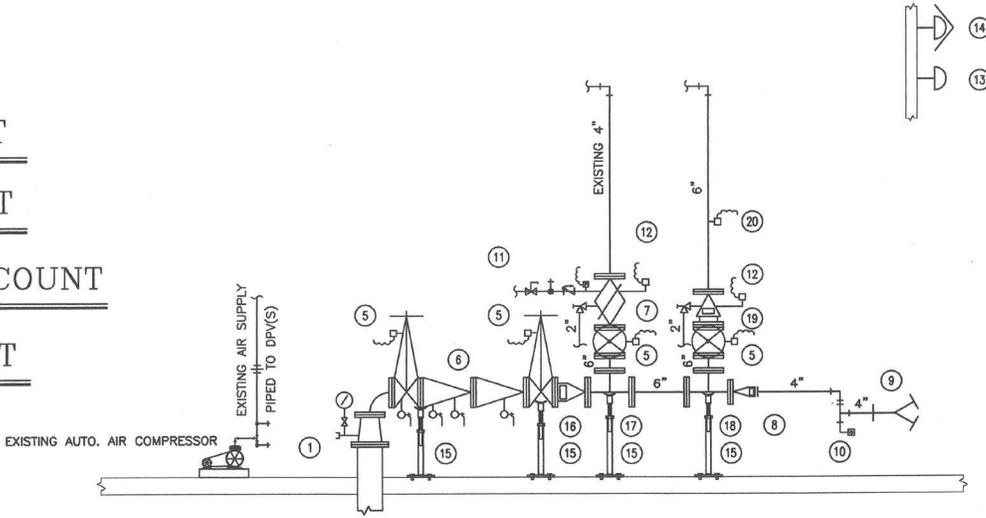
SYSTEM 1 INFORMATION	
THIS SYSTEM IS PROTECTING THE FOLLOWING AREA WITH THE FOLLOWING NUMBER OF SPRINKLER HEADS	
FLOOR ONE AREA SPRINKLER HEADS	3500 SQFT. -- --
FLOOR TWO AREA SPRINKLER HEADS	-- -- SQFT. -- --
FLOOR THREE AREA SPRINKLER HEADS	-- -- SQFT. -- --
SYSTEM 1 TOTAL AREA SPRINKLER HEADS	-- -- SQFT. -- --

HYDRAULIC - SYSTEM 1	
THIS BUILDING IS PROTECTED BY A HYDRAULICALLY DESIGNED AUTOMATIC SPRINKLER SYSTEM.	
LOCATION OF SYSTEM	Performance Hall
NO. OF SPRINKLER HEADS	140
BASIS OF DESIGN	
1. DENSITY	.22 GPM/SQFT
2. AREA OF DISCHARGE	1500 SQFT
3. IN-RACK SPRINKLERS	0 GPM
4. INSIDE HOSE	0 GPM
5. OUTSIDE HOSE	250 GPM
TOTAL SYSTEM REQUIREMENTS	
1. GPM DISCHARGE	744.4 GPM
2. RESIDUAL PRESSURE	47.6 PSI

FIRE PROTECTION SPRINKLER SYSTEM	
PART 1 - GENERAL	
1.1 SUMMARY	
A. Fabricate, install, and secure required approvals for an installation of a fire protection sprinkler system for the Indian Hill Art Center Performance Hall, as specified herein, and as needed for a complete and proper installation in accordance with pertinent requirements of the Fire Rating Bureau and governmental agencies having jurisdiction.	B. Provide supports, hangers, inserts, and associated items to properly support sprinkler piping in accordance with pertinent provisions of NFPA Pamphlet No. 13.
1.2 SUBMITTALS	
A. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit, to the engineer:	2.3 OTHER MATERIALS
1. Materials list of items proposed to be provided under this Section. All materials shall be UL listed and FM approved.	A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.
B. Record Drawings: Include a copy of the As-built Record Drawings.	PART 3 - EXECUTION
1.3 QUALITY ASSURANCE	
A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.	3.1 SURFACE CONDITIONS
B. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, comply with:	A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
1. Recommendations of the Fire Rating Bureau having jurisdiction;	3.2 INSTALLATION
2. Pertinent recommendations contained in NFPA Pamphlet No. 13, "Standards for Sprinkler System Installations."	A. Coordinate as necessary with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
PART 2 - PRODUCTS	
2.1 MATERIALS	
A. Sprinkler heads:	
1. Provide as shown on the Sprinkler Head Schedule.	
3.3 TESTING AND ACCEPTANCE	
A. Upon completion of the installation, provide necessary personnel and equipment and test and retest the complete system, making adjustments as required, and secure all necessary approvals.	B. When the system has been completely approved, secure a letter of final acceptance from the Fire Rating Bureau having jurisdiction, and forward two (2) copies of the letter to the Architect.
GENERAL NOTES:	
The fire protection work to be performed under this specification shall fully comply with the requirements of the Littleton Fire Department, and the insurance carriers for Indian Hills Art Center. The specified work consists of the installation of a hydraulically calculated sprinkler system to provide sprinkler coverage for the entire building with a maximum coverage of 120 square feet.	
After the completion of this work, the sprinkler system in this tenant space shall be in full compliance with all Littleton Fire Department regulations and with the current edition of NFPA 13 for hydraulically calculated sprinkler systems.	
All bidders for this scope of work shall visit the site prior to submitting a bid. Failure to inspect the site will not be considered a valid basis for any cost increase to the Owner.	



1. EXISTING UNDERGROUND LEAD IN
2. NOT USED
3. NOT USED
4. NOT USED
5. EXISTING UL-FM FLG'D OS&Y w/ TAMPER SWITCH
6. EXISTING DOUBLE CHECK VALVE ASSEMBLY w/ TEST VALVES.
7. EXISTING DRY PIPE VALVE
8. EXISTING SWING CHECK VALVE
9. EXISTING FDC
10. EXISTING AUTOMATIC BALL DRIP & ST. ELL
11. EXISTING AIR SUPPLY TO DPV
12. EXISTING ELECTRIC WATER PRESSURE SWITCH
13. EXISTING OUTSIDE ELECTRIC BELL
14. EXISTING WATER MOTOR ALARM
15. EXISTING PIPE STAND
16. 6" GxG CHK. VA. CENTRAL MOD. 90
17. 6x6x6 FLANGED TEE
18. 6x4x6 FLANGED RED. TEE
19. 6" "CENTRAL" MODEL # F F x F ALARM CHECK VALVE COMPLETE w/ TRIM, GAGES, DRAIN & RETARDING CHAMBER
20. 6" "NOTIFIER" VANE WATER FLOW SWITCH

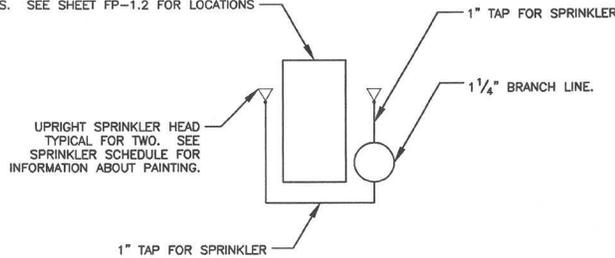


### RISER DETAIL & LEGEND

1  
FP-1

NOT TO SCALE

EXPOSED WOOD TRUSS. SEE SHEET FP-1.2 FOR LOCATIONS



### UPRIGHT SPRINKLER HEAD DETAIL

2  
FP-1

NOT TO SCALE

PROJECT: INDIAN HILL ARTS  
LITTLETON, MA 01460

SF PERFORMANCE HALL  
FIRST AND SECOND FLOOR PLUMBING PLANS

Received  
Thursday 4/23/98

**MULLANEY CORPORATION**  
General Contractors  
Construction Managers

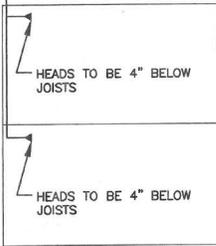
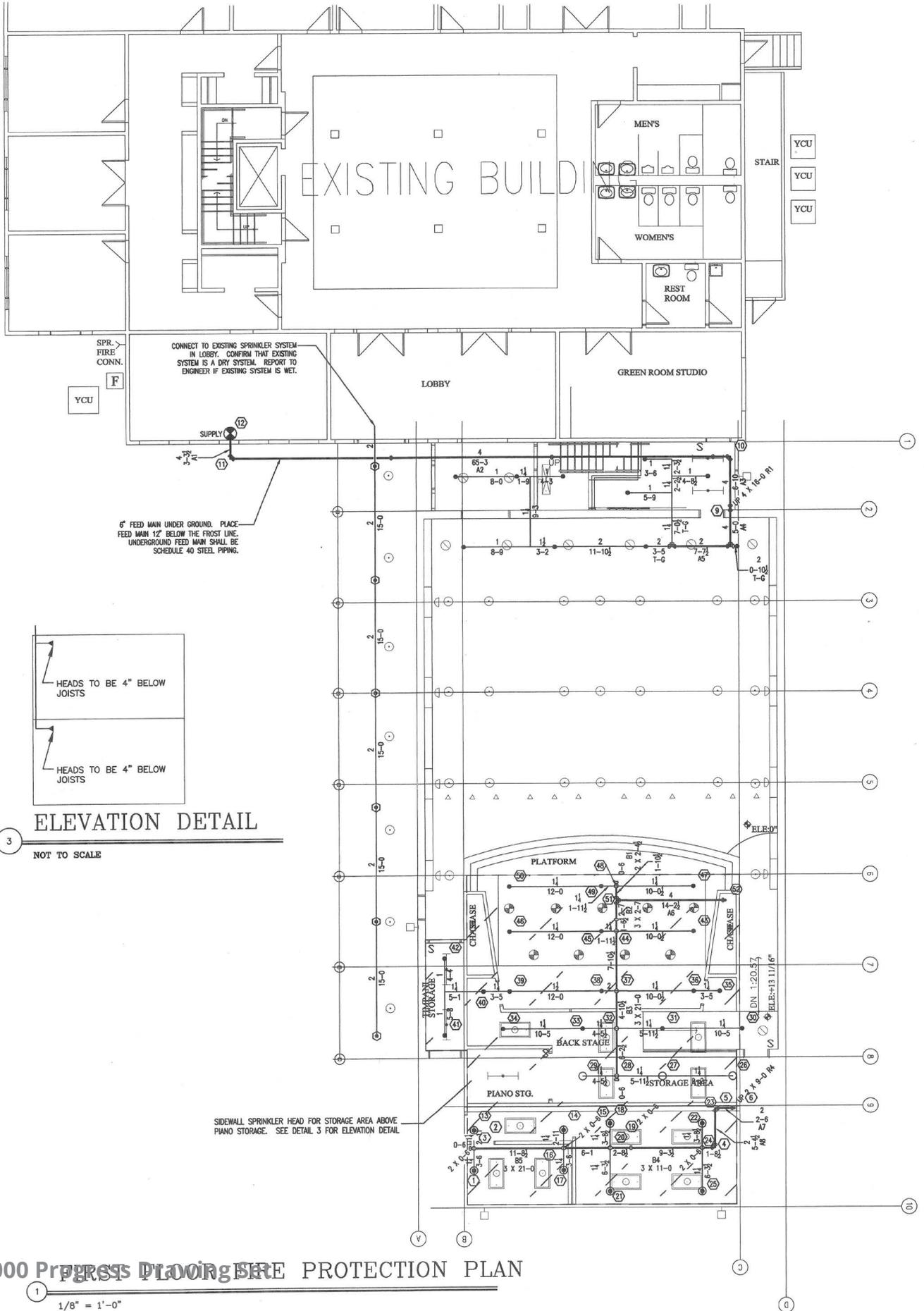
GENERAL CONTRACTOR:

**MULLANEY CORPORATION**  
General Contractors, Design Build  
Construction Management  
36 School Street, Lecomster, MA 01463 (508)537-8800

James Conway  
Engineering, Inc.  
Tel: (603) 776-6185  
Fax: (603) 776-3958  
Peppermint Hill, MA  
Brookline, NH

FILE:  
JOB#



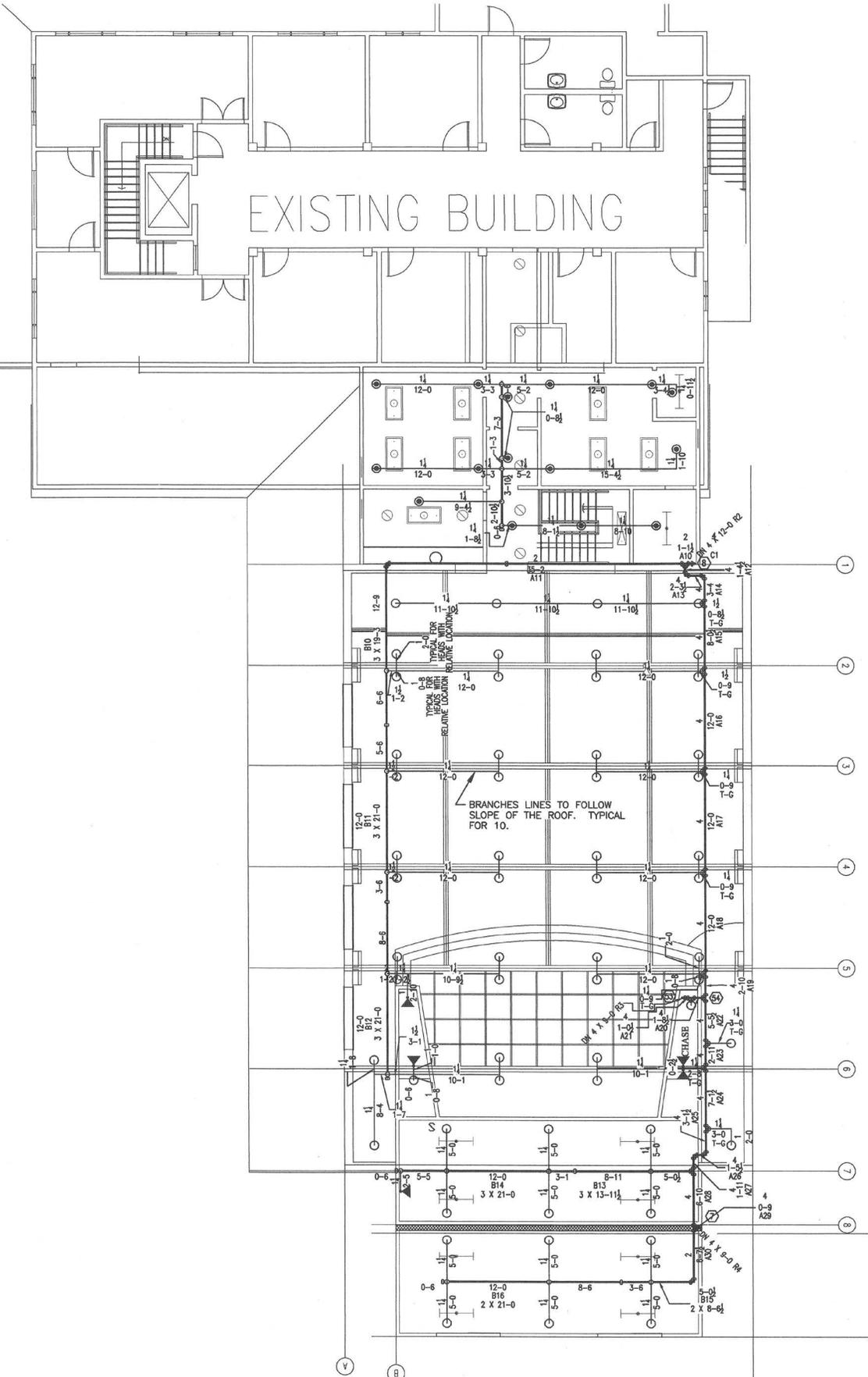


**ELEVATION DETAIL**

3  
NOT TO SCALE

SIDEWALL SPRINKLER HEAD FOR STORAGE AREA ABOVE PIANO STORAGE. SEE DETAIL 3 FOR ELEVATION DETAIL.

**2000 Progress Building FIRE PROTECTION PLAN**



SECOND FLOOR FIRE PROTECTION PLAN

1/8" = 1'-0"

Drawings not to scale. Refer to drawing set.



FILE:  
JOB#

**James Conway**  
Engineering, Inc.  
Peppas, MA  
Brookline, NH  
Tel: (603) 692-6105  
Fax: (603) 692-9752

GENERAL CONTRACTOR:  
**MULLANEY CORPORATION**  
General Contractors, Design Build  
Construction Management  
36 School Street, Leominster, MA 01453 (508)537-8900

Received  
Thursday 4/23/98  
**MULLANEY CORPORATION**  
General Contractors  
Construction Managers

PROJECT: INDIAN HILL ARTS  
LITTLETON, MA 01460  
SF PERFORMANCE HALL  
FIRST AND SECOND FLOOR PLUMBING PLANS

**FP-1.2**

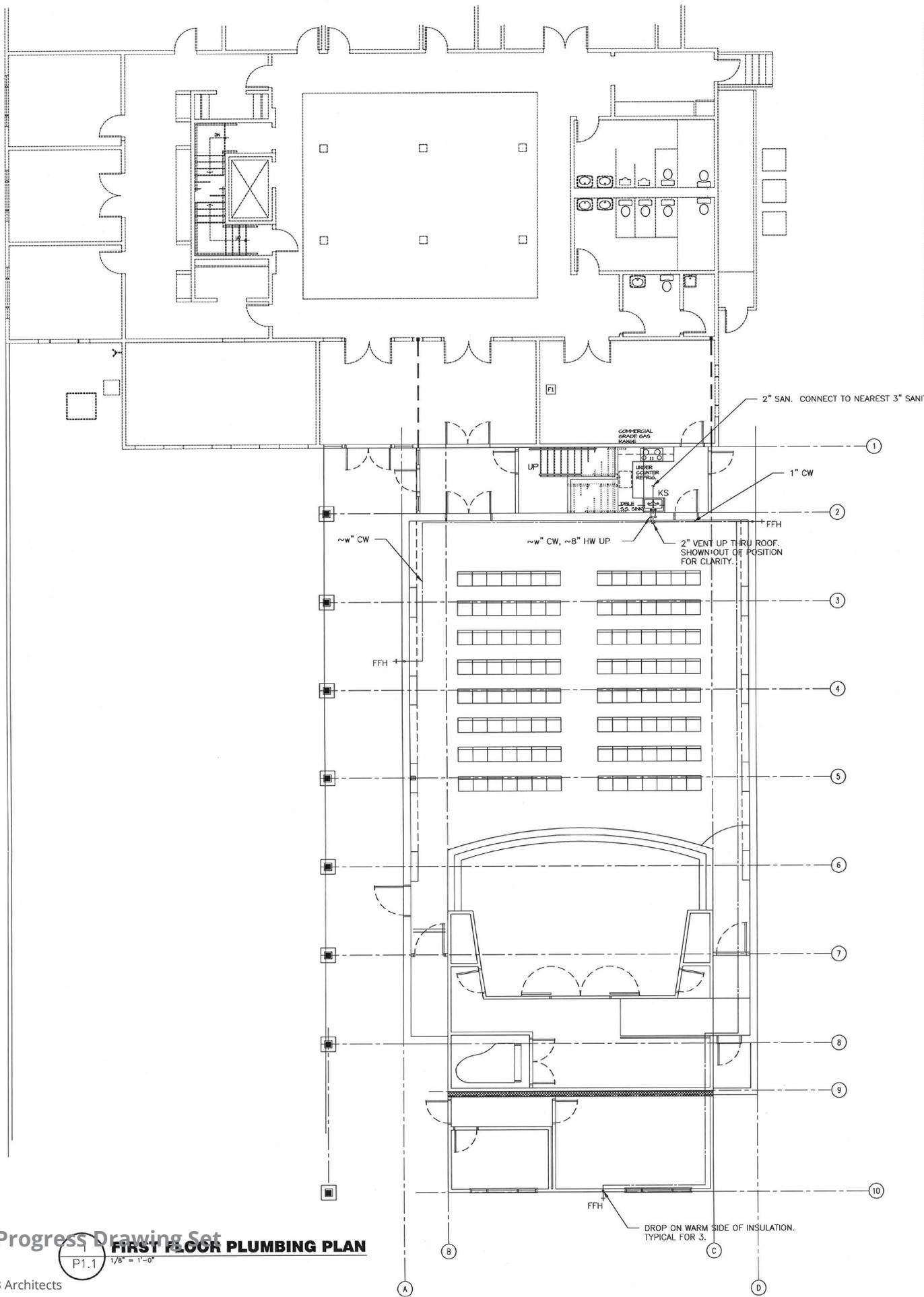
O:\projects\ME-1655\plan\_Hill\_Arts\Conway\Download 4-5-2021\P-1.dwg, 04/05/21 01:40:56 PM

# 1000 Progress Drawing Set

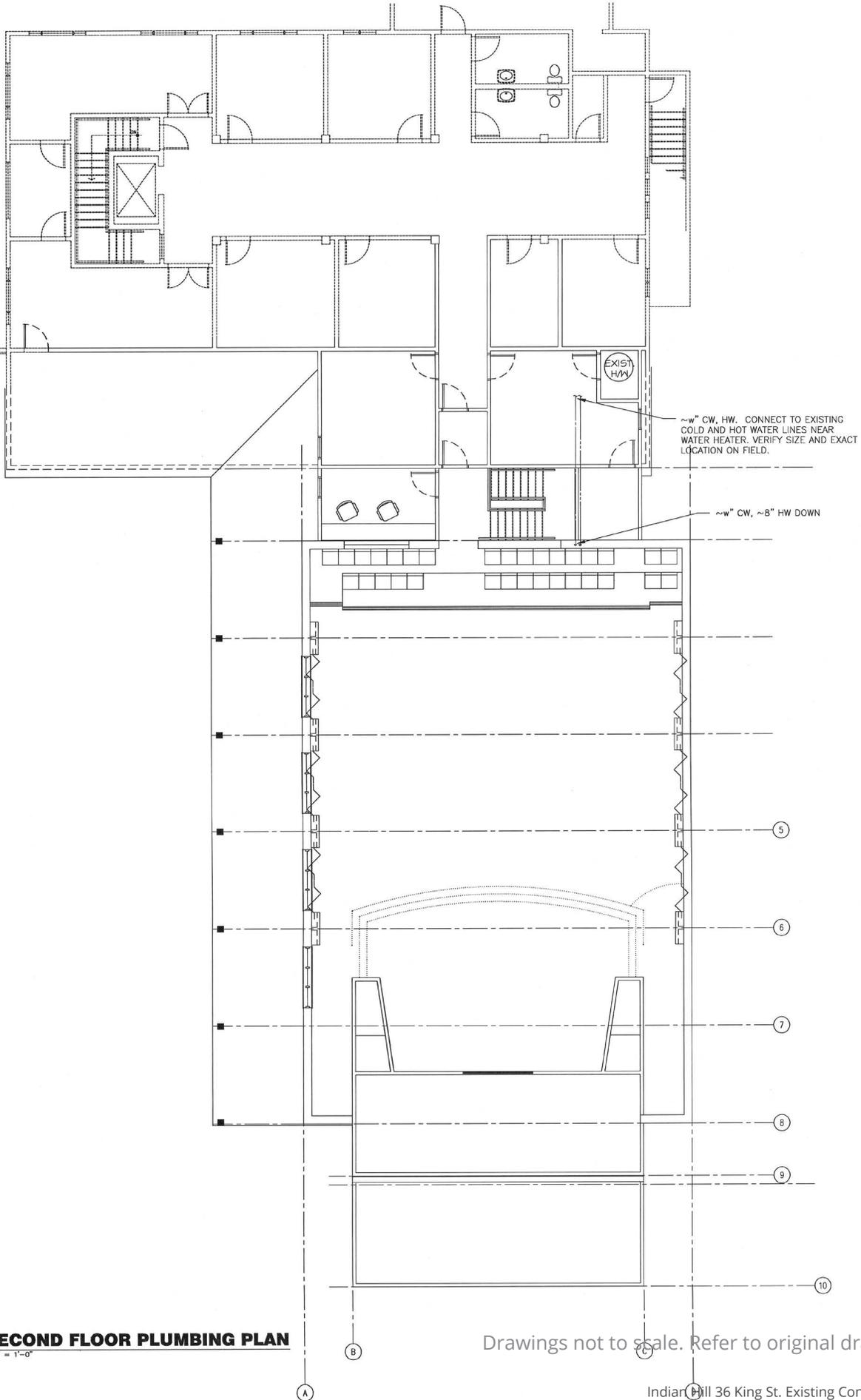
P1.1  
1/8" = 1'-0"

## FIRST FLOOR PLUMBING PLAN

46 | LLB Architects



ARY IN BASEMENT.



**INDIAN HILL MUSIC CENTER**  
 LITTLETON, MA 01460  
 PROJECT:

PROPOSED 7,292 SF PERFORMANCE HALL  
 FIRST AND SECOND FLOOR PLUMBING PLANS

DATE:	03/12/1998
SCALE:	AS NOTED
DRAWN BY:	DSF
DESIGN BY:	JNC
REVISIONS	07/14/00 REVISIONS

GENERAL CONTRACTOR:  
**MULLANEY CORPORATION**  
 General Contractors, Design, Build  
 30 School Street, Leominster, MA 01453 (508)537-8900

**CONWAY ENGINEERING**  
 Fort Myers, FL  
 Waterbury, VT / Pepperell, MA  
 Tel: (603) 673-6105 Fax: (603) 673-3752

FILE:  
 JOB# CE-1655

**2 SECOND FLOOR PLUMBING PLAN**  
 P1.1 1/8" = 1'-0"

Drawings not to scale. Refer to original drawing set.

### PLUMBING FIXTURES & EQUIPMENT SCHEDULE

MARK	FIXTURE DESCRIPTION	PRODUCT MANUFACTURER MODEL	SAN. SIZE	VENT SIZE	TRAP TYPE	COLD SIZE	HOT SIZE	FURNISHED BY		INSTALLED BY		CONNECTED BY		FIT
								P.C.	OTHER	P.C.	OTHER	P.C.	OTHER	
KS	KITCHEN SINK	ELKAY LR-3322	1 1/2"	1 1/2"	P-TRAP	1/2"	1/2"	X		X		X		
FFH	FROST FREE HYDRANT	ZURN Z-1320	---	---	---	3/4"	---	X		X		X		
MARK	FIXTURE DESCRIPTION	PROVIDED BY OTHERS MANUFACTURER MODEL	SAN. SIZE	VENT SIZE	TRAP TYPE	COLD SIZE	HOT SIZE	FURNISHED BY P.C. G.C.	INSTALLED BY P.C. G.C.	INSTALLED BY P.C. G.C.				

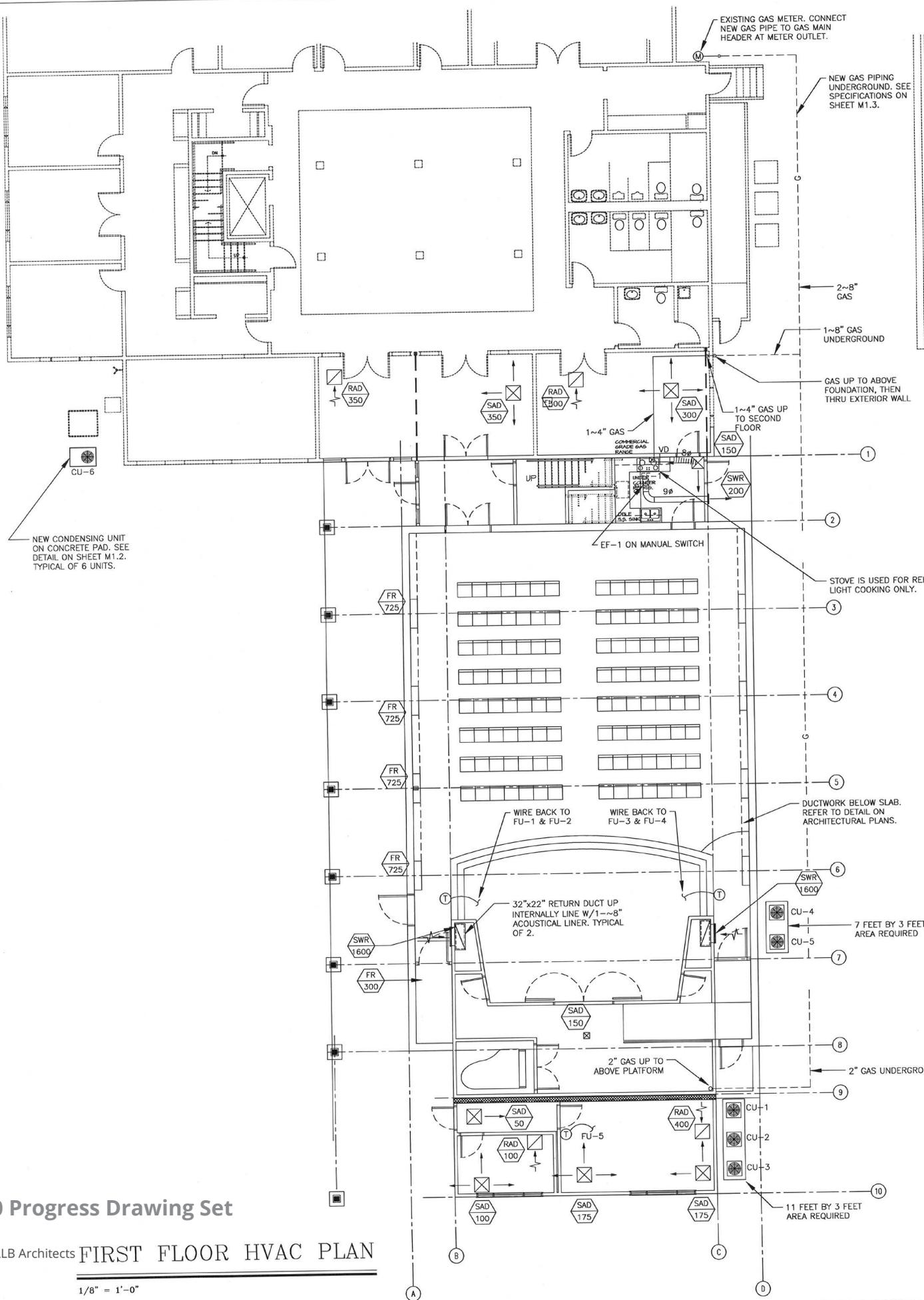
### PLUMBING SPECIFICATIONS

- 1- ALL WORK SHALL BE IN ACCORDANCE WITH MASSACHUSETTS PLUMBING CODE..
- 2- ALL CONTRACTORS SHALL MAKE A COMPLETE INSPECTION OF THE SITE PRIOR TO SUBMITTING A BID. FAILURE TO INSPECT THE SITE SHALL NOT BE A VALID REASON FOR A COST INCREASE TO THE OWNER.
- 3- FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY FOR PROPER AND COMPLETE INSTALLATION OF ALL PLUMBING SYSTEMS SHOWN ON THESE DRAWINGS.
- 4- INSTALL GATE VALVES AND UNIONS ON ALL HOT AND COLD WATER CONNECTIONS TO EQUIPMENT.
- 5- ALL PIPING SHALL BE PARALLEL TO BUILDING WALLS, EXCEPT WHERE DRAWN TO THE CONTRARY, SUPPORTED AND ANCHORED PER CODE TO FACILITATE EXPANSION, CONTRACTION, AND SEISMIC ACTIVITY. ALL PIPING SHALL BE CONCEALED EXCEPT IN UNFINISHED SPACES. INSTALL AS REQUIRED TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK INCLUDING DUCTS, ELECTRICAL CONDUIT, AND FIRE PROTECTION PIPING. AT ALL CONNECTIONS BETWEEN FERROUS AND NON-FERROUS PIPING, PROVIDE AN ISOLATING DIELECTRIC UNION.
- 6- PROVIDE ALL FITTINGS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE PLUMBING SYSTEMS FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED.
- 7- PIPING ROUTED IN EXTERIOR WALLS SHALL BE ROUTED ON WINTER WARM SIDE OF BUILDING WALL INSULATION.
- 8- ACCESS PANELS SHALL BE PROVIDED WHERE CONCEALED CONTROL DEVICES, VALVES, ETC. ARE CONCEALED WITHIN WALLS. WHERE ACCESS FOR ADJUSTMENT AND MAINTENANCE IS POSSIBLE THROUGH LAY-IN SUSPENDED CEILINGS, ACCESS PANELS ARE NOT REQUIRED.
- 9- INSTALL A TRAP AT EACH PLUMBING FIXTURE AND ALL PIECES OF EQUIPMENT, UNLESS OTHERWISE NOTED ON THE DRAWING.
- 10- IT IS NOT THE INTENTION OF THESE DRAWINGS TO SHOW EVERY FITTING, VALVE, HANGER DEVICE, ETC., ALL SUCH ITEMS SHALL BE FURNISHED AND INSTALLED AS NECESSARY TO PROVIDE A COMPLETE AND OPERABLE PLUMBING SYSTEM.
- 11- BUILDING SANITARY DRAINAGE SYSTEM DESIGN IS BASED ON 1/8" MINIMUM FALL, AND DEVIATIONS SHALL BE APPROVED BY THE ARCHITECT/ENGINEER.
- 12- MATERIAL SHALL BE NEW AND AS FOLLOWS, EXCEPT WHERE NOTED ON DRAWING;
  - A- DRAINAGE PIPING: NO-HUB CAST IRON, STANDARD WEIGHT.
  - B- WATER PIPING: COPPER, TYPE L.
  - C- PLUMBING FIXTURES: TYPE, COLOR, AND TRIM AS NOTED ON SCHEDULE.
  - D- VALVES: 125 PSI RATED PRESSURE, MANUFACTURE, AND TYPE AS NOTED.
- 13- PERFORM THE FOLLOWING TESTS;
  - A- WATER PIPING SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST OF 150 PSI FOR A PERIOD OF TIME SUFFICIENT TO EXAMINE THE ENTIRE SYSTEM, BUT NOT LESS THAN FOUR HOURS.
  - B- DRAINAGE PIPING SHALL BE TESTED WITH ENDS OF THE SYSTEM BEING PLUGGED AND THE ENTIRE SYSTEM FILLED WITH A 5-FOOT HEAD OF WATER. WATER SHALL STAND UNTIL INSPECTION IS MADE AND THE WATER LEVEL REMAINS CONSTANT.
  - C- CORRECT ANY AND/OR ALL DEFECTS DISCLOSED BY THE ABOVE TESTS.
- 14- STERILIZE WATER LINES WITH A MIXTURE OF 2 POUNDS OF CHLORINE TO EACH 1,000 GALLONS OF WATER (50 PPM OF AVAILABLE CHLORINE). RETAIN THE MIXTURE IN PIPES FOR 24 HOURS AND FLUSH IT THOROUGHLY WITH POTABLE WATER BEFORE PLACING SYSTEM IN SERVICE.
- 15- COMPLETE SYSTEM: FIXTURES AND EQUIPMENT SHALL BE GIVEN AND IN-SERVICE TEST AFTER COMPLETION OF THE INSTALLATION.
- 16- FURNISH A WRITTEN GUARANTEE THAT PLUMBING WORK IS FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP, FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE, REPAIR AND REPLACE ALL WORK WHICH BECOMES DEFECTIVE, AT NO EXPENSE TO THE OWNER.
- 17- VERIFY THE WATER PRESSURE WITH WATER PROVIDED OR THE FIRE PROTECTION CONTRACTOR, AND INSTALL A PRESSURE REDUCING VALVE ON THE DOMESTIC WATER SERVICE LINE IF THE WATER PRESSURE IS AT OR ABOVE 80 PSI.
- 18- PROVIDE INDIVIDUAL VENTS FOR ALL PLUMBING FIXTURES OR LOOP VENT THE PLUMBING FIXTURES BACK TO THE MAIN VENT LOCATIONS.
- 19- INSULATE ALL HOT AND COLD WATER PIPING AS FOLLOWS:
  - A- 1/2" TO 1 1/4" WITH 1/2" FIBER GLASS INSULATION.
  - B- 1 1/2" TO 4" WITH 1" FIBER GLASS INSULATION.

FITTINGS, ACCESSORIES AND COMMENTS	COLOR	MARK
ELKAY LK-230-BH-5	STAINLESS	KS
---	STAINLESS	FFH
FITTINGS AND ACCESSORIES	COLOR	MARK

<b>PROJECT:</b> <b>INDIAN HILL MUSIC CENTER</b> LITTLETON, MA 01460 PROJECT:	
<b>DATE:</b> 03/12/1998 <b>SCALE:</b> NO SCALE <b>DRAWN BY:</b> DSF <b>DESIGN BY:</b> JNC	<b>REVISIONS</b> 07/14/00 REVISIONS
<b>GENERAL CONTRACTOR:</b>  <b>MULLANEY CORPORATION</b> General Contractors, Design, Build Construction Management 36 School Street, Leominster, MA 01453 (508)537-8900	
<b>CONWAY ENGINEERING</b> Fort Myers, FL Brookline, MA Tel: (603) 673-6105 Fax: (603) 673-3755	
<b>FILE:</b> JOB# CE-1655	

Drawings not to scale. Refer to original drawing set.



NEW CONDENSING UNIT ON CONCRETE PAD. SEE DETAIL ON SHEET M1.2. TYPICAL OF 6 UNITS.

EXISTING GAS METER. CONNECT NEW GAS PIPE TO GAS MAIN HEADER AT METER OUTLET.

NEW GAS PIPING UNDERGROUND. SEE SPECIFICATIONS ON SHEET M1.3.

2-8" GAS

1-8" GAS UNDERGROUND

GAS UP TO ABOVE FOUNDATION, THEN THRU EXTERIOR WALL

1-4" GAS UP TO SECOND FLOOR

COMMERCIAL GRADE GAS SPACE

EF-1 ON MANUAL SWITCH

STOVE IS USED FOR REHEAT LIGHT COOKING ONLY.

WIRE BACK TO FU-1 & FU-2

WIRE BACK TO FU-3 & FU-4

DUCTWORK BELOW SLAB. REFER TO DETAIL ON ARCHITECTURAL PLANS.

32"x22" RETURN DUCT UP INTERNALLY LINE W/1-8" ACOUSTICAL LINER. TYPICAL OF 2.

7 FEET BY 3 FEET AREA REQUIRED

2" GAS UP TO ABOVE PLATFORM

2" GAS UNDERGROUND

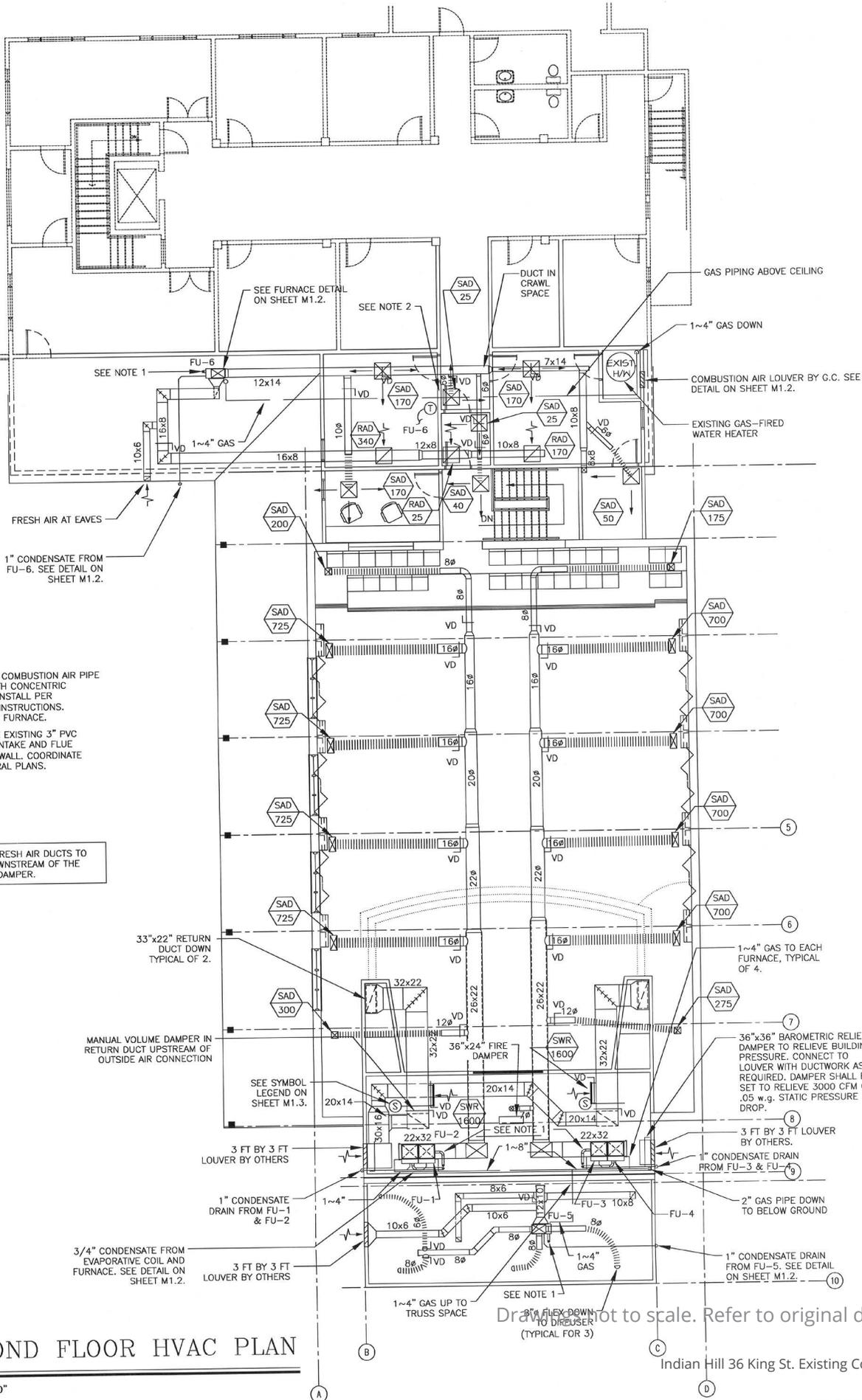
11 FEET BY 3 FEET AREA REQUIRED

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1000 Progress Drawing Set

155 | LLB Architects FIRST FLOOR HVAC PLAN

1/8" = 1'-0"



**DRAWING NOTES:**

- NOTE 1: FLUE AND COMBUSTION AIR PIPE UP THRU ROOF WITH CONCENTRIC TERMINATION KIT. INSTALL PER MANUFACTURER'S INSTRUCTIONS. TYPICAL FOR EACH FURNACE.
- NOTE 2: RELOCATE EXISTING 3" PVC COMBUSTION AIR INTAKE AND FLUE PIPING IN NEW 6" WALL. COORDINATE WITH ARCHITECTURAL PLANS.

NOTE: CONNECT FRESH AIR DUCTS TO RETURN DUCT DOWNSTREAM OF THE MANUAL VOLUME DAMPER.

**SECOND FLOOR HVAC PLAN**

1/8" = 1'-0"

Do not scale. Refer to original drawing set.

Indian Hill 36 King St. Existing Conditions

**PROJECT:**  
**INDIAN HILL MUSIC CENTER**  
 LITTLETON, MA 01460

REVISIONS	DATE
07/14/00 REVISIONS	03/12/1998

SCALE: 1/8" = 1'-0"  
 DRAWN BY: CPM  
 DESIGN BY: JNC/CPM

**GENERAL CONTRACTOR:**  
**MULLANEY CORPORATION**  
 General Contractors, Design, Build  
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 38 School Street, Leominster, MA 01453 (508)537-8900

**CONWAY ENGINEERING**  
 Fort Myers, FL  
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FILE: J08# CE-1655

**M1.1**

PROPOSED 7,232 SF PERFORMANCE HALL  
 HVAC FIRST AND SECOND FLOOR PLANS

## AIR COOLED CONDENSING UNIT SCHEDULE

MARK NO.	LOCATION	SERVICE	MANUFACTURER	MODEL NUMBER	TYPE	SENSIBLE	TOTAL	VOLTAGE	M.C.A.	MAX FUSE	WEIGHT (LBS.)	REMARK KEY	SEER
CU-1	PAD	A/C	YORK	H2BD048	OUTDOORS	36,200	48,000	208/3/60	19.1	30	175	1,2,3	10.00
CU-2	PAD	A/C	YORK	H2BD048	OUTDOORS	36,200	48,000	208/3/60	19.1	30	175	1,2,3	10.00
CU-3	PAD	A/C	YORK	H2BD048	OUTDOORS	36,200	48,000	208/3/60	19.1	30	175	1,2,3	10.00
CU-4	PAD	A/C	YORK	H2BD048	OUTDOORS	36,200	48,000	208/3/60	19.1	30	175	1,2,3	10.00
CU-5	PAD	A/C	YORK	H1DB012	OUTDOORS	9,500	13,100	208/1/60	10.8	15	120	1,2,3	10.00
CU-6	PAD	A/C	YORK	H2DH024	OUTDOORS	16,900	23,400	208/1/60	12.4	20	157	1,2	12.20

- RATINGS ARE AT ARI CONDITIONS.
- FURNISH WITH OFF CYCLE TIMER.
- FURNISH WITH COMPRESSOR BLANKET.

## EXHAUST FAN SCHEDULE

MARK NO.	LOCATION	SERVICE	MAKE	MODEL	C.F.M.	S.P.	TYPE	DRIVE	POWER	R.P.M.	VOLTAGE
EF-1	ABV CEILING	EXHAUST	GREENHECK	CSP-224-OD	241	1/8" W.G	CENTRIF	DIRECT	83 W	1000	120/1/60

## FURNACE SCHEDULE

MARK NO.	LOCATION	SERVICE	MANUFACTURER	MODEL NUMBER	C.F.M.	MIN. O.A.	STATIC	AFUE	FUEL TYPE	HEAT INPUT (BTUH)	HEAT OUTPUT (BTUH)	FLUE SIZE	VOLTAGE
FU-1	PLATFORM	HVAC	YORK	P3URD2DN0950	1600	750	0.5" W.G	93.0%	NAT. GAS	100,000	94,000	3" Dia	120/1/60
FU-2	PLATFORM	HVAC	YORK	P3URD2DN0950	1600	750	0.5" W.G	93.0%	NAT. GAS	100,000	94,000	3" Dia	120/1/60
FU-3	PLATFORM	HVAC	YORK	P3URD2DN0950	1600	750	0.5" W.G	93.0%	NAT. GAS	100,000	94,000	3" Dia	120/1/60
FU-4	PLATFORM	HVAC	YORK	P3URD2DN0950	1600	750	0.5" W.G	93.0%	NAT. GAS	100,000	94,000	3" Dia	120/1/60
FU-5	ABV CLG	HVAC	YORK	P3URD08N0370	500	100	0.5" W.G	92.4%	NAT. GAS	40,000	37,000	2" Dia	120/1/60
FU-6	CRAWL SP	HVAC	YORK	P3URD08N0370	810	120	0.4" W.G	92.4%	NAT. GAS	40,000	37,000	2" Dia	120/1/60

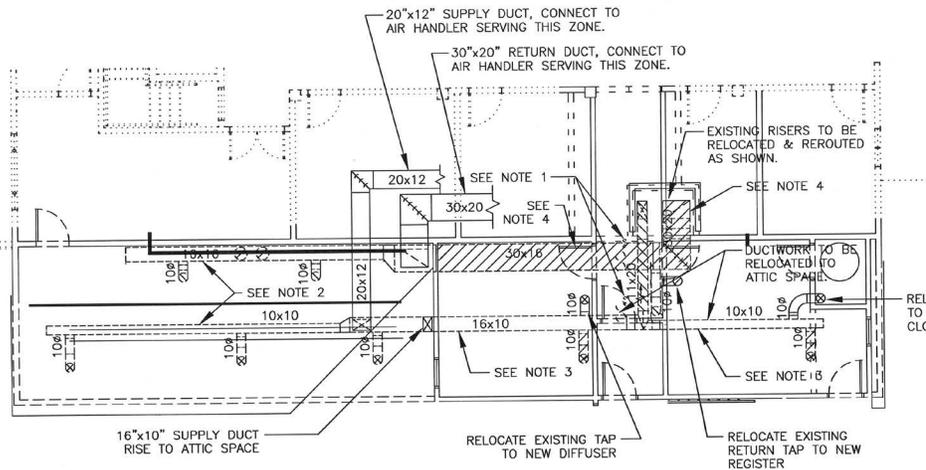
- FURNISH WITH CONCENTRIC VENTING KIT.
- FURNISH TWINNING KITS TO COMBINE FU-1&2 AND FU-3&4.
- FURNISH WITH EXTERNAL SIDE RACK FILTER WITH 6 MONTHS SUPPLY OF THROWAWAY FILTERS.

## DUCT LEGEND

-----	EXISTING DUCTS TO REMAIN OR BE RELOCATED
////	EXISTING DUCTS TO BE REMOVED
=====	NEW DUCTS

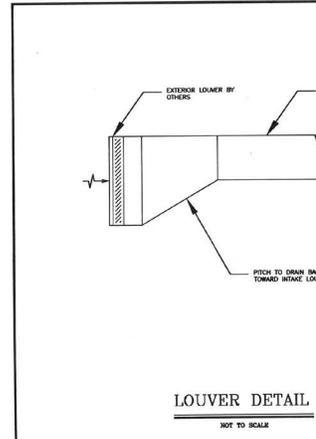
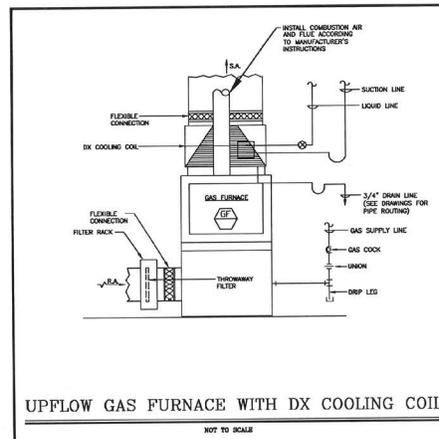
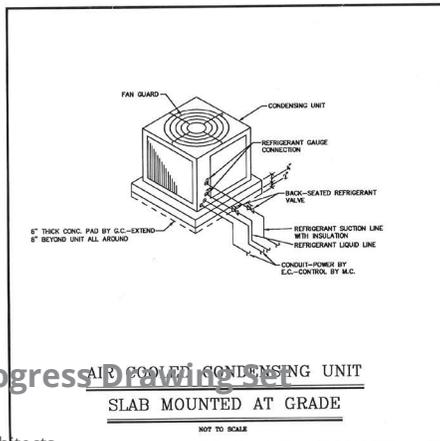
### DRAWING NOTES:

- EXISTING 3" DIA. PVC COMBUSTION AIR INTAKE AND FLUE PIPING TO BE RELOCATED. SEE SHEET M-1.
- EXISTING DUCTWORK TO REMAIN.
- EXISTING DUCTWORK TO BE RELOCATED TO THE TRUSS SPACE ABOVE.
- EXISTING DUCTWORK TO BE REMOVED.



## PARTIAL ATTIC DEMOLITION PLAN

1/8" = 1'-0"



M.C.A./MAX FUSE	WEIGHT (LBS.)	INDOOR COIL
12/20	170	G1UA048S21
9/20	110	G3US018
9/20	110	G3UA024

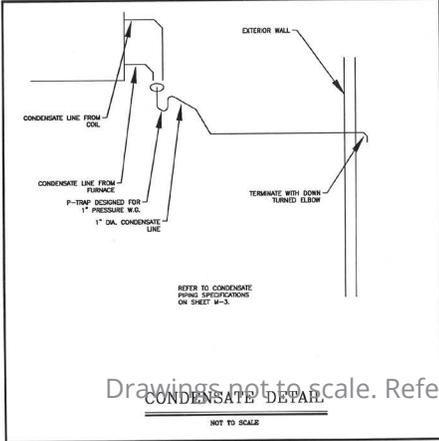
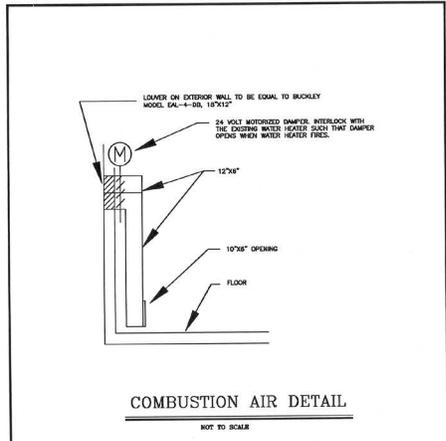
FLOOR REGISTER SCHEDULE				
ITEM	MARK	SIZE	RANGE CFM	MFG & MODEL #
AIR FLOW (CFM)	FR X	12"x4"	0 - 175	METAL*AIRE MODEL 2000FD W/ OBD
AIR FLOW (CFM)	RAR X	12"x4"	0 - 175	METAL*AIRE SERIES SBG STEEL
		16"x8"	176 - 400	
		18"x12"	401 - 700	

SIDEWALL REGISTER SCHEDULE				
ITEM	MARK	SIZE	RANGE CFM	MFG & MODEL #
AIR FLOW (CFM)	SWR X	12"x4"	0 - 130	METAL*AIRE MODEL V4004D DOUBLE DEFLECTION W/ OBD
		12"x8"	131 - 300	
		24"x14"	701 - 1150	
AIR FLOW (CFM)	SWR X	12"x6"	0 - 220	METAL*AIRE MODEL # RH
		16"x8"	221 - 400	
		18"x12"	401 - 700	
		24"x16"	701 - 1250	

CEILING DIFFUSER SCHEDULE				
ITEM	MARK	SIZE	RANGE CFM	MFG & MODEL #
SUPPLY AIR FLOW (CFM)	SAD X	6"ø	0 - 100	FOR LAY-IN T-BAR CEILINGS USE METAL*AIRE MODEL 7500-6-BDS
		8"ø	101 - 175	
		10"ø	176 - 270	
RETURN AIR FLOW (CFM)	RAD X	6"x6"	0 - 125	FOR LAY-IN T-BAR CEILINGS USE METAL*AIRE MODEL 7000-R7D7 W/OBD
		8"x8"	126 - 220	
		10"x10"	221 - 335	
		22"x10"	336 - 760	
				FOR LAY-IN T-BAR CEILINGS USE METAL*AIRE MODEL 7550-R6 W/OBD

LOCATE EXISTING TAP  
NEW WATER HEATER  
RESET

SEE PLAN FOR SIZES AND  
ROUTING



PROJECT: **INDIAN HILL MUSIC CENTER**  
LITTLETON, MA 01460  
PROPOSED 1232 SF PERFORMANCE HALL  
HVAC SCHEDULES AND DETAILS

DATE: 03/12/1998  
SCALE: NOT TO SCALE  
DRAWN BY: CPM  
DESIGN BY: JNC/CPM

GENERAL CONTRACTOR:  
**MULLANEY CORPORATION**  
General Contractors, Design/Build  
Construction Management  
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**CONWAY ENGINEERING**  
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FILE: JOB# CE-1655

Drawings not to scale. Refer to original drawing set.

## ABBREVIATION LIST

M.C. = MECHANICAL CONTRACTOR  
P.C. = PLUMBING CONTRACTOR  
E.C. = ELECTRICAL CONTRACTOR  
A.F.F. = ABOVE FINISHED FLOOR

## SYMBOL LEGEND

- VD  VOLUME DAMPER. PROVIDE ONE IN EACH RUNOUT TO A SUPPLY REGISTER OR GRILLE.
- U/C  G.C. TO UNDERCUT DOOR TO ALLOW AIRFLOW TO THE MAIN RETURN. FOR AIR QUANTITIES BETWEEN 0 AND 50 CFM, UNDERCUT BY 1/2", AND BY 1" FOR MORE THAN 50 CFM.
-  TWO STAGE HEAT/COOL THERMOSTAT FURNISHED AND INSTALLED 4'-0" A.F.F. THERMOSTAT SHALL HAVE FAN ON/OFF/AUTO CONTROL. CONTROL WIRING BY M.C. SEE PLAN FOR LOCATIONS, TYPICAL.
- FD  FIRE DAMPER TO BE U.L. 555, 1-1/2 HR RATED. RECTANGULAR DAMPERS TO BE EQUAL TO BUCKLEY MODEL 150B. ROUND DAMPERS TO BE EQUAL TO BUCKLEY MODEL 150C-RD. FUSIBLE LINK SHALL BE RATED AT 165 DEG. F.

## HVAC SPECIFICATIONS

### 1. SUMMARY OF WORK

A. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE EXTENT, GENERAL CHARACTER AND LOCATION OF THE WORK INCLUDED. OFFSETS AND/OR CHANGES IN ELEVATION OF PIPING AND DUCTWORK DUE TO STRUCTURAL OR OTHER INTERFERENCES SHALL BE PROVIDED WITHOUT EXTRA COST.

B. CONTRACTOR SHALL VERIFY AND EVALUATE ALL EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK.

C. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF COMPLETE AND OPERATING SYSTEMS.

D. ENTIRE DEMOLITION AND NEW WORK INSTALLATION SHALL CONFORM WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF MUNICIPAL, STATE AND FEDERAL AUTHORITIES INCLUDING BOCA, ASME, ASTM, ANSI, ASHRAE, SMACNA AND NFPA.

### 2. MOTORS AND DRIVES

A. MOTOR MANUFACTURERS: GENERAL ELECTRIC TRI-CLAD 700, LINCOLN, GOULD E-PLUS.

B. BELT DRIVE MANUFACTURERS: T.B. WOODS, BROWNING, EATON.

C. MOTOR CHARACTERISTICS: 1/2 HP AND OVER - 208V/3 PHASE/60; UNDER 1/2 HP - 115V/1 PHASE/60.

D. MOTOR TYPE:

1. HIGH EFFICIENCY (NEMA IEEC 112B), CONSTANT SPEED, 1.15 SERVICE FACTOR, CLASS B INSULATION, SQUIRREL CAGE INDUCTION TYPE.

2. PROVIDE TEFC OR TEAO MOTORS.

E. DRIVES: V-BELT, UNLESS OTHERWISE SPECIFIED, DESIGNED FOR 150 PERCENT OF HP RATING, BELT TENSIONER, VARIABLE PITCH SHEAVES FOR BALANCING AND PERMANENT FIXED PITCH SHEAVES. DELIVER VARIABLE PITCH SHEAVES TO OWNER AFTER FIXED PITCH SHEAVE REPLACEMENT.

F. GUARDS: IN ACCORDANCE WITH OSHA. PROVIDE GREASE FITTING EXTENSIONS TO GUARD EXTERIOR AND TACHOMETER HOLE COVERPLATES.

### 3. MECHANICAL EQUIPMENT AND PIPING IDENTIFICATION

A. PROVIDE IDENTIFICATION OF ALL PIPES, VALVES, AND EQUIPMENT

B. IDENTIFICATION DEVICES TO BE USED SHALL INCLUDE THE FOLLOWING:

1. PLASTIC PIPE MARKERS
2. VALVE TAGS AND EQUIPMENT TAGS
3. VALVE SCHEDULE

C. IDENTIFICATION MATERIALS MANUFACTURED BY ONE OF THE FOLLOWING:

1. SETON NAMEPLATE CORP.
2. ALLEN SYSTEMS INC.
3. BRADY CO.

### 4. REFRIGERANT PIPING

A. PIPE:

USE TYPE ACR DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS. INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS AND ASHRAE STANDARD 15.

### 5. INSULATION

ALL INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS IN ACCORDANCE WITH ASTM E84 AND NFPA 90A.

A. DUCTWORK INSULATION

1. SUPPLY AND MAKE-UP AIR DUCTWORK WITHIN CONDITIONED SPACES SHALL BE INSULATED WITH BLANKET TYPE FIBERGLASS INSULATION WITH A VINYL JACKET WITH VAPOR BARRIER. INSULATION SHALL BE 1" THICK WITH A MINIMUM R-VALUE OF 4.2 AS INSTALLED.

2. SUPPLY AND RETURN AIR DUCTWORK WITHIN UNCONDITIONED SPACES SHALL BE INSULATED WITH BLANKET TYPE FIBERGLASS INSULATION WITH A VINYL JACKET WITH VAPOR BARRIER. INSULATION SHALL BE 3" THICK WITH A MINIMUM R-VALUE OF 8 AS INSTALLED.

### 6. REFRIGERANT PIPING INSULATION

1. ALL REFRIGERANT PIPING TO BE INSULATED WITH FLEXIBLE ELASTOMERIC TYPE INSULATION ASTM C 534, TYPE I. COAT WITH WATER BASED LATEX ENAMEL COATING RECOMMENDED BY MANUFACTURER.

### 6. SUPPORTS AND ANCHORS

A. MANUFACTURERS: GRINNELL, B-LINE, O.Z. GEDNEY, MICHIGAN HANGER, BERGEN/CARPENTER AND PATERSON.

### 7. TESTING AND BALANCING

A. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF ADJUSTABLE FAN SHEAVES. EXISTING BRANCH DAMPERS ARE TO BE USED FOR ANY REQUIRED TRIM ADJUSTMENT.

B. UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL REPLACE ANY ANY EXISTING PORTION OF THE ASSOCIATED SYSTEM(S) AFFECTED BY THE RENOVATIONS.

C. THE CONTRACTOR SHALL PROVIDE ALL LABOR AND EQUIPMENT REQUIRED TO BALANCE ALL AIR SYSTEMS IN ACCORDANCE WITH QUANTITIES SHOWN.

D. BALANCING REPORT SHALL BE PROVIDED ON AABC TYPE FORMS.

### 8. DUCTWORK

A. THE DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "SMACNA" APPLICABLE MANUALS. ALL DUCTWORK SHALL BE THE LOW VELOCITY TYPE, UNLESS SPECIFIED OTHERWISE.

B. CONTRACTOR SHALL PROVIDE AND INSTALL APPROVED FIRE DAMPERS AND ACCESS PANELS IN ANY AND ALL DUCTWORK WHICH PENETRATES A HORIZONTAL OR VERTICAL FIRE PARTITION, OR AS OTHERWISE SHOWN ON DRAWINGS.

C. ALL BRANCH DUCTS TO HAVE VOLUME DAMPERS.

D. SMOOTH TURN RADIUS DUCTWORK OR TURNING VANES SHALL BE USED THROUGHOUT WHERE FLOW EXCEEDS 150 CFM.

E. ALL DUCT JOINTS TO BE SEALED IN ACCORDANCE WITH "SMACNA" STANDARDS AND ACCEPTED GOOD PRACTICE.

F. ALL DUCT DIMENSIONS SHOWN ARE NET INSIDE VALUES. DIMENSIONS MAY BE CHANGED SO LONG AS THE NET FREE FACE AREA IS MAINTAINED.

G. ALL SUPPLY AND RETURN DUCTWORK 15 FEET DOWNSTREAM OF THE HVAC UNIT AND AS INDICATED SHALL BE INTERNALLY LINED WITH A 1" ACOUSTICAL DUCT LINER.

H. CONTRACTOR SHALL SPRAY PAINT INSIDE OF DUCT BLACK, BEHIND ALL GRILLES AND REGISTERS.

I. COORDINATE WITH THE GENERAL CONTRACTOR AND THE ARCHITECTURAL REFLECTED CEILING PLAN TO THE EXACT LOCATION OF ALL SUPPLY DIFFUSERS, REGISTERS, AND RETURN GRILLES. INSTALL SAME FLUSH AND PERPENDICULAR TO ADJACENT WALLS.

J. ALL DUCT CONNECTIONS TO FAN DRIVEN UNITS SHALL BE MADE WITH 6" WIDE FIREPROOF FLEXIBLE DUCT CONNECTOR.

K. BEFORE THE HVAC SYSTEM IS OPERATED, ALL DUCTS SHALL BE BLOWN OUT AND THOROUGHLY CLEANED. SYSTEM SHALL BE TESTED AT FULL PRESSURE AND ALL LEAKS AND FAULTS CORRECTED.

### 9. FLEXIBLE TYPE DUCT

A. FLEXIBLE DUCT SHALL BE EQUAL TO BUCKLEY "FABRIFLEX 4". FLEXIBLE DUCT CONNECTORS SHALL BE LISTED BY U.L., CLASS 1 DUCTS, AND SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AND A SMOKE DEVELOPED RATING NOT EXCEEDING 50. DUCTS SHALL CONFORM TO NFPA 90A.

B. USE OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO NO MORE THAN 6 LINEAR FEET PER RUN.

C. CONTRACTOR SHALL BE CAREFUL SO AS NOT TO KINK OR COLLAPSE FLEXIBLE DUCT.

### 10. CONDENSATE PIPING

A. CONDENSATE PIPING SHALL BE SCHEDULE 40 PVC WITH 1/2" THICK ARMAFLEX INSULATION.

# GENERAL NOTES - HVAC

1. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER. CARE SHALL BE EXERCISED TO MINIMIZE ANY INCONVENIENCE OR DISTURBANCE TO OTHER AREAS OF THE BUILDING WHICH ARE TO REMAIN IN OPERATION. ISOLATE WORK AREAS BY MEANS OF TEMPORARY PARTITIONS AND/OR TARPS TO KEEP DUST AND DIRT WITHIN THE CONSTRUCTION AREA.
2. CLEAN THE JOB SITE DAILY AND REMOVE FROM THE PREMISES ANY DIRT AND DEBRIS CAUSED BY THE PERFORMANCE OF THE WORK INCLUDED IN THIS CONTRACT.
3. THIS CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH ANY WORK. WHERE DISCREPANCIES OCCUR BETWEEN THESE DOCUMENTS AND EXISTING CONDITIONS, THE DISCREPANCY SHALL BE REPORTED TO THE OWNER AND/OR ENGINEER FOR EXPEDITING AND RESOLVE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFEKEEPING OF HIS OWN PROPERTY ON THE JOB SITE. OWNER ASSUMES NO RESPONSIBILITY FOR PROTECTION OF PROPERTIES AGAINST FIRE, THEFT AND ENVIRONMENTAL CONDITIONS.
5. PROVIDE ALL NECESSARY TEMPORARY OR PERMANENT CAPS OR PLUGS FOR PIPING. DO NOT LEAVE PIPING OPEN ENDED. WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL". THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES PRIOR TO FABRICATION, PURCHASE AND/OR INSTALLATION OF ALL WORK.
6. USE OF THE OWNER'S ELEVATORS AND BUILDING CORRIDORS FOR HANDLING OF THE OWNER'S AND REMOVED EQUIPMENT AND MATERIALS SHALL BE AT THE DIRECTION OF THE OWNER AND SHALL BE COORDINATED WITH HIS OPERATIONS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RIGGING, HANDLING AND PROTECTION OF MATERIALS.
8. CONTRACTOR SHALL PROVIDE LABOR TO RECEIVE, UNLOAD, STORE, PROTECT AND TRANSFER TO POINT OF INSTALLATION, OWNER FURNISHED ITEMS.
9. WHERE CONDUIT, CABLES, DUCTWORK OR PIPING PASSES THROUGH FIRE RATED FLOORS OR WALLS, THE SLEEVES SHALL BE COMPLETELY SEALED WITH A FIRE STOP MATERIAL THAT IS UL LISTED AND ACCEPTED BY THE BUILDING DEPARTMENT AND FIRE DEPARTMENT AS BEING SUITABLE FOR THIS SERVICE SUCH AS DOW CORNING CORP., SILICONE ELASTOMER, DOW CORNING 3-6548 SILICONE RTV FOAM, OR APPROVED EQUAL. THIS MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER TO MAINTAIN THE FIRE RATING OF THE PENETRATED WALL OR FLOOR.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORING AS IT RELATES TO HIS WORK.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BEAM PENETRATIONS AS IT RELATES TO HIS WORK. CONTRACTOR SHALL SUBMIT SIZE AND LOCATION TO THE STRUCTURAL ENGINEER FOR REVIEW AND DETAIL.
12. CONTRACTOR SHALL SUBMIT (6) SETS OF SHOP DRAWINGS AND EQUIPMENT CUTS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING ANY WORK.
13. UPON COMPLETION OF CONSTRUCTION CONTRACTOR SHALL SUPPLY THE ENGINEER WITH (1) COMPLETE SET OF MYLAR AS-BUILT DOCUMENTS AND (3) COMPLETE COPIES OF OPERATIONS AND MAINTENANCE MANUALS. MYLARS SHALL BE OBTAINED AT CONTRACTOR'S EXPENSE.
14. SUBMISSION OF PROPOSAL DIRECTLY OR INDIRECTLY IN CONNECTION WITH THIS WORK SHALL IMPLY THAT THE BIDDER HAS EXAMINED THE JOB SITE UNDER WHICH HE WILL BE OBLIGATED TO OPERATE. SHOULD HE BE AWARDED THE WORK UNDER THIS CONTRACT, NO EXTRA CHARGE WILL BE ALLOWED FOR FAILURE OF ANY BIDDER TO EXAMINE THE SITE PRIOR TO BID.
15. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DIMENSIONS IN THE FIELD, AND SHALL ADVISE THE ARCHITECT/ENGINEER AND THE OWNER OF ANY DISCREPANCIES BEFORE PERFORMING THE WORK.
16. ALL WORK SHALL CONFORM TO ALL STATE AND LOCAL CODES, RULES AND REGULATIONS AND ORDINANCES.
17. CONTRACTOR SHALL SECURE AND PAY ALL FEES AND PERMITS PERTAINING TO THE CONTRACT.
18. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. THE CONTRACTOR SHALL PROVIDE ALL HANGERS AND SUPPORTS REQUIRED FOR A COMPLETE INSTALLATION.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR WORKMEN'S IDENTIFICATION AND BADGING, SAFETY AND FIRE PROTECTION, CONTRACTOR'S LIABILITY INSURANCE, BARRICADES, WARNING SIGNS, TRASH REMOVAL, CUTTING AND PATCHING.

**INDIAN HILL MUSIC CENTER**  
LITTLETON, MA 01460  
PROJECT:

PROPOSED 1232 SF PERFORMANCE HALL  
HVAC SPECIFICATIONS

DATE: 03/12/1998  
SCALE: NOT TO SCALE  
DRAWN BY: CPW  
DESIGN BY: JNC/CPW

REVISIONS  
07/14/00 REVISIONS

GENERAL CONTRACTOR:

**MULLANEY CORPORATION**  
General Contractors, Design Build  
Construction Management  
36 School Street, Loomis, MA 01453 (508)537-8900

CONWAY ENGINEERING  
Fort Myers, FL (813) 435-7755  
Pepperell, MA (603) 673-6105  
Tel: (603) 673-6105

FILE:  
JOB# CE-1655

## GAS PIPING SPECIFICATIONS

**UNDERGROUND PIPING:**

1. ALL GAS PIPING SHALL CONFORM TO THE NATIONAL FUEL GAS CODE ANSI Z223.1, NFPA 54, AND ALL LOCAL CODES AND ORDINANCES.
2. ALL UNDERGROUND PIPING SHALL BE CLEAR OF ALL UNDERGROUND STRUCTURES. ALL PIPING SHALL BE ACCESSIBLE FOR MAINTENANCE.
3. TRENCHES SHALL BE GRADED SUCH THAT THE PIPE HAS A FIRM CONTINUOUS BEARING.
4. PIPING SHALL BE BURIED 18" DEEP AND BACKFILLED.
5. PIPING SHALL BE PROTECTED FROM GALVANIC CORROSION.

**PIPE MATERIALS:**

1. ABOVE GROUND: SCHEDULE 40 BLACK STEEL, THREADED WITH MALLEABLE IRON FITTINGS.
2. BELOW GROUND: PLASTIC, CONFORM TO ASTM D2513.
3. HANGERS: CLEVIS TYPE, 10'-0" O.C. HANG FROM STRUCTURAL MEMBERS ONLY.

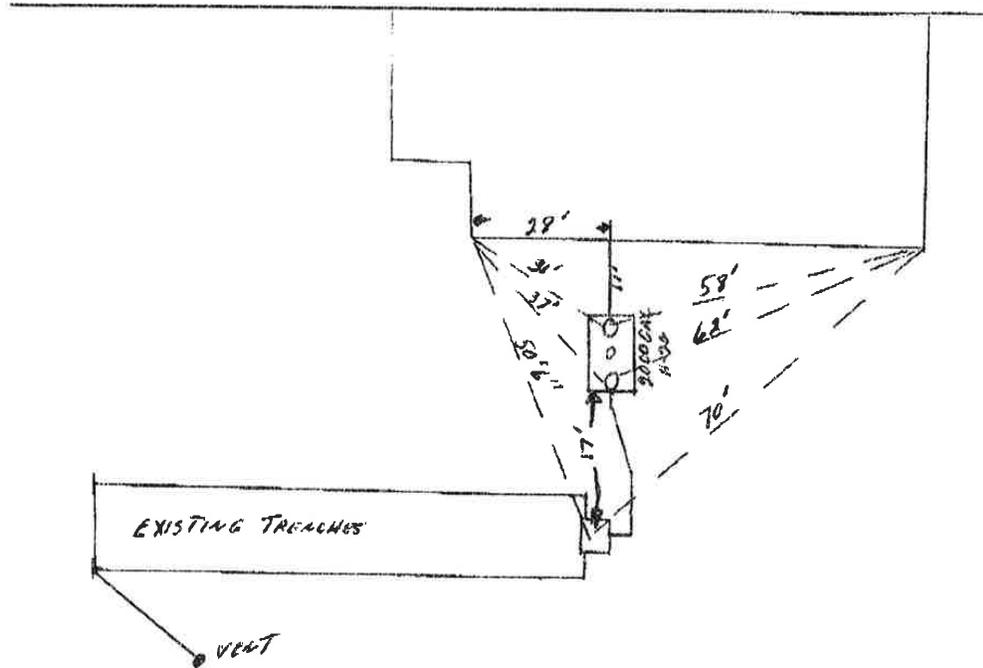
**GENERAL:**

1. FURNISH ALL LABOR AND MATERIALS NECESSARY FOR A COMPLETE GAS PIPING SYSTEM FROM THE EXISTING GAS METER TO EACH PIECE OF GAS-FIRED EQUIPMENT.
2. INSTALL PIPING PARALLEL TO BUILDING WALLS EXCEPT WHERE SPECIFICALLY SHOWN TO THE CONTRARY. PIPING SHALL BE CONCEALED EXCEPT IN UNFINISHED SPACES.
3. COORDINATE WITH OTHER TRADES TO ALLOW FOR THE INSTALLATION OF CONDUITS, DUCTS, AND FIRE PROTECTION PIPING.
4. PROVIDE DIELECTRIC UNIONS WHERE FERROUS AND NON-FERROUS PIPES MUST BE JOINED.

Drawings not to scale. Refer to original drawing set.

**M1.3**

INSTALLER'S AS-BUILT AND CERTIFICATION



D.J. TUCKER EXCAVATING, INC.  
 3 Quail Run  
 LEOMINSTER, MA 01453  
 (508) 334-3299

I \_\_\_\_\_ CERTIFY THAT I HAVE INSTALLED THE  
 ABOVE SYSTEM AT LOT # 30-36 KING ST., IN ACCORDANCE WITH  
 (Street)

THE APPROVED DESIGN PLAN BY DAVID E. ROSS ASSOC.  
 (Engineer or Sanitarian)

L-3258 9-20-95 AND PERMIT ISSUED  
 (Plan Number) (Revised)

BY THE LITTLETON BOARD OF HEALTH.  
 (Town)

John D. Tucker  
 Installer's Signature

\_\_\_\_\_  
 License Number

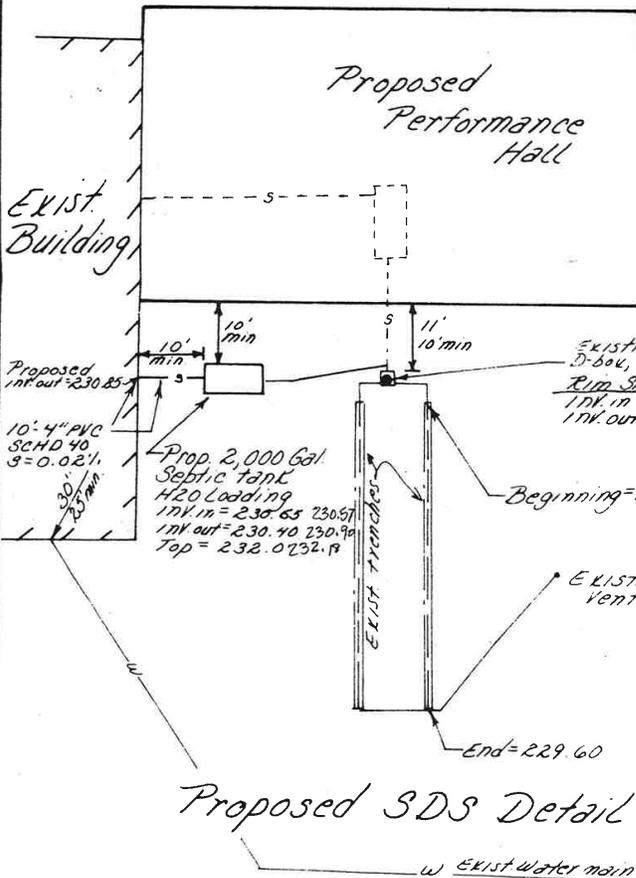
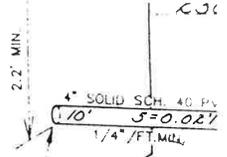
End = 229.60

# Existing SDS Detail

Note Information on as-built SDS leaching trenches was taken from the SDS as-built plans by Acton Survey & Engineering, Inc dated June 6, 1991

FOUNDATION

INV. AT BUILDING = 230.85  
SEAL JOINT - WATER TIGHT  
SEE LOCAL PLUMBING REGS



2.  
WATE  
HS 10  
  
TANK  
SYST  
  
TANK  
SHOU  
EXCE  
  
AT LE  
LEAS  
PORT  
OVER  
INLET

Existing H<sub>2</sub>O loading  
D-box, 4" dia  
Rim 5" MH #1 = 233.30  
TK in = 230.18  
TK out = 229.93

Dummy as built  
DRA INV in 229.90  
out = 229.79

## Proposed SDS Detail

8" Perforated  
High density  
polyethylene broeCHD

### INDIAN HILL ARTS SEWAGE DISPOSAL SYSTEM DESIGN CRITERIA

#### EXISTING SEWAGE DISPOSAL SYSTEM:

MAXIMUM FLOW ALLOWED IN AQUIFER DISTRICT:	845 gpd
DESIGN FLOW (AND AS-BUILT FLOWS):	844.5 gpd
PERMITTED FLOW:	686.68 gpd
EXISTING SEPTIC TANK:	1500 gallons

Pre-case  
set on

#### PROPOSED CHANGE OF USE:

SCHOOL (no cafeteria, gym or showers)		
ELEMENTARY STUDENTS	25 @ 5 gpd/student	= 140 gpd
SECONDARY STUDENTS	14 @ 10 gpd/student	= 140 gpd
FACULTY AND STAFF	22 @ 10 gpd/person	= 220 gpd
PERFORMANCE HALL (AUDITORIUM)		
	110 @ 3 gpd/seat	= 330 gpd
TOTAL:		840 gpd

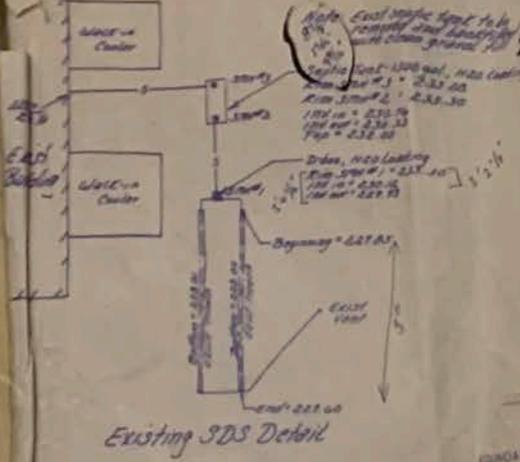
Proposed flow of 840 gpd is below the design capacity of the existing SDS but will require the permit to be modified to reflect the revised use and septic tank location.

#### SEPTIC TANK

MINIMUM REQUIRED SIZE PER TITLE 5 = 840 gpd x 2 = 1680 gal.  
PROPOSED TANK SIZE = 2000 gal.

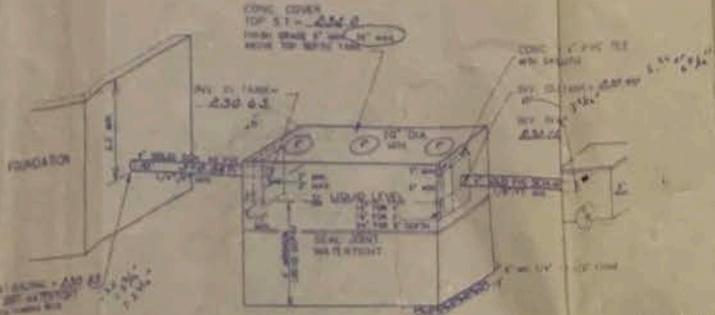
Schedule of Elevations

Location	Fin	Pipe	Inch	Comp
1000-0	238.3	18" PVC	238.2	227.3
1000-1	238.3	18" PVC	238.13	227.9
1000-2	238.2	18" PVC	238.01	227.2
1000-3	238.1	6" PVC	226.01	222.83
1000-4	237.62	6" PVC	227.67	218.77
1000-5	237.74	6" PVC	224.38	224.10
1000-6	227.29			217.93
1000-7	227.89			217.74
1000-8	225.57			220.22



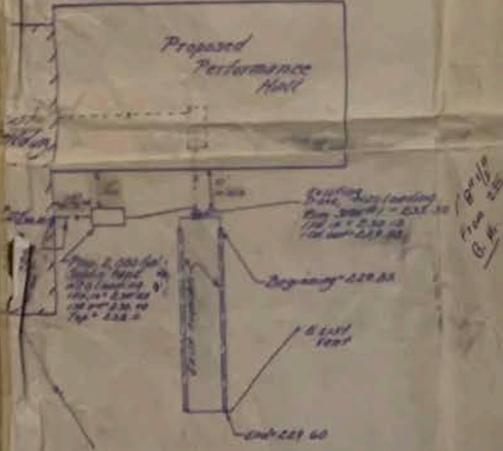
Existing SDS Detail

Information on existing SDS location provided by letter from the SDS to the District of Columbia City & Engineering, Inc. on the 12/28/88.



2,000 GALLON SEPTIC TANK DISTRIBUTION BOX (existing)

TANK SYSTEM TO BE LIFTED THROUGH BUILDING PLUMBING SYSTEM AS REQUIRED BY BUILDING CODE. TANK SHOULD BE INSPECTED AND MAINTAINED. TANK SHOULD BE PUMPED WHEN SLUDGE DEPTHS IN THE SYSTEM EXCEEDS ONE QUARTER OF THE TOTAL LINE DEPTH. AT LEAST THREE (3) MANHOLES SHALL BE PROVIDED AT LEAST ONE (1) OF THESE MANHOLES SHALL BE CONSIDERED AS MAIN ACCESS POINT TO THE FINAL GRADE SYSTEM OVER 1000 GPM SHALL HAVE ACCESS POINTS AT BOTH 18" AND 6" DIA. TANKS.



Proposed SDS Detail

INDIAN HILL ANDY TEXAS DISPOSAL SYSTEM DESIGN CRITERIA

EXTREME WINDS DISPOSAL SYSTEM:

WIND LOAD ALLOWED IN SECTION 1000-1.1 = 140 PSF  
 WIND LOAD (AND ADJUSTED WIND) = 140 PSF  
 WIND FLOW = 120.48 PSF

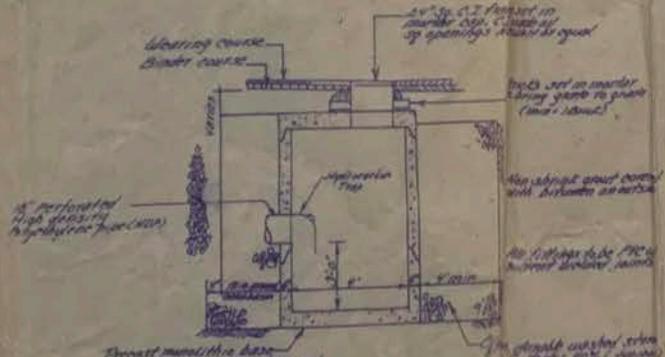
EXISTING SEPTIC TANK = 1000 GPM CAPACITY

PROPOSED CHANGE OF USE:

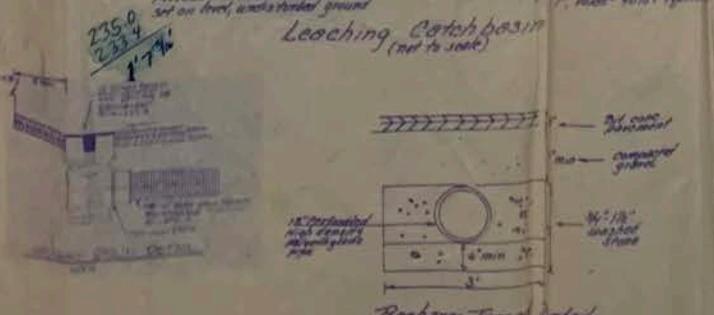
GENERAL OFFICES (SEE IN SHOWERS)	20 @ 5 gpd/person	100 gpd
COMMUNITY STUDENTS	14 @ 10 gpd/student	140 gpd
TECHNICAL STAFF	21 @ 10 gpd/person	210 gpd
PERFORMANCE HALL / AUDITORIUM	170 @ 1 gpd/seat	170 gpd
TOTAL		420 gpd

PROPOSED 2000 GPM TO BE LIFTED TO THE DESIGN CAPACITY OF THE EXISTING SDS TO BE PROVIDED THE DESIGN TO BE MODIFIED TO MEET THE DESIGN AND INSTALLATION CRITERIA.

DESIGN WIND SPEED PER TITLE 5 = 840 MPH X 2 = 1680 MPH  
 WINDS 1000 PSF

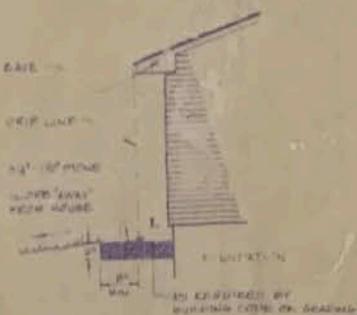


Leaching Catch Basin (not to scale)



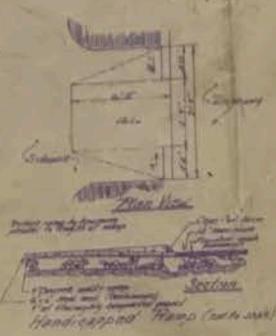
Discharge Trench Detail (not to scale)

Littleton Planning Board  
 DATE OF APPROVAL: Aug 11, 1993  
 DATE OF ENVIRONMENT: Aug 17, 1993  
 David E. Ross  
 Mason J. Jamill  
 James C. Ferguson  
 William J. Child

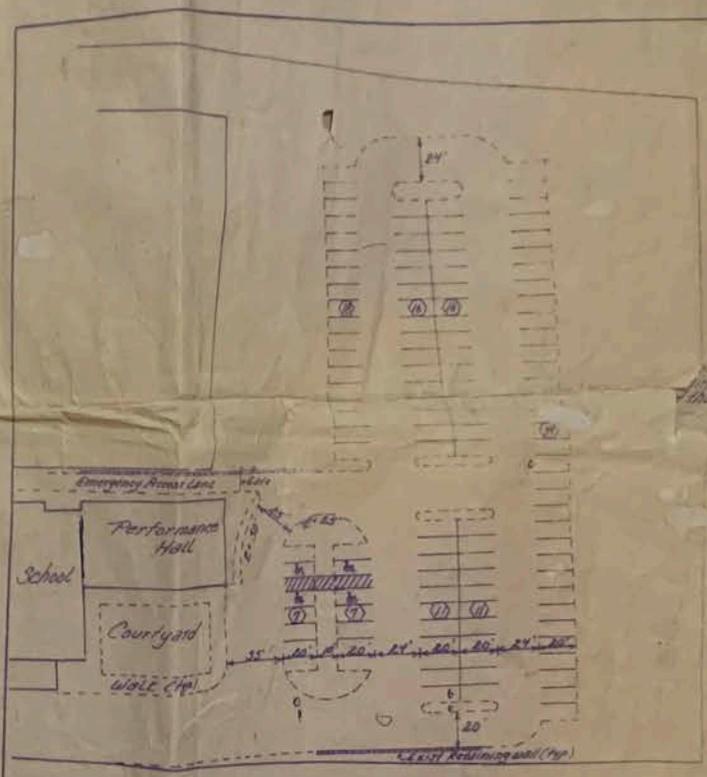


Gutter Recharge Detail  
 (Not to Scale)  
 Note: Roof support shall be recharged at drip line and gutter outlet

Drip Line Recharge Trench  
 (Not to Scale)



Pavement Cross-section  
 (Not to Scale)



Sketch of 120 Parking Spaces  
 Scale: 1" = 40'  
 \*Not for construction. Sketch shows ability to conform with parking regulations.



DECIDUOUS TREE PLANTING DETAIL      SHRUB PLANTING DETAIL



Revisions  
 7-20-93 Alternative parking layout  
 8-14-93 Alternative parking layout  
 8-20-93 Alternative parking layout  
 8-20-93 Alternative parking layout  
 8-20-93 Alternative parking layout

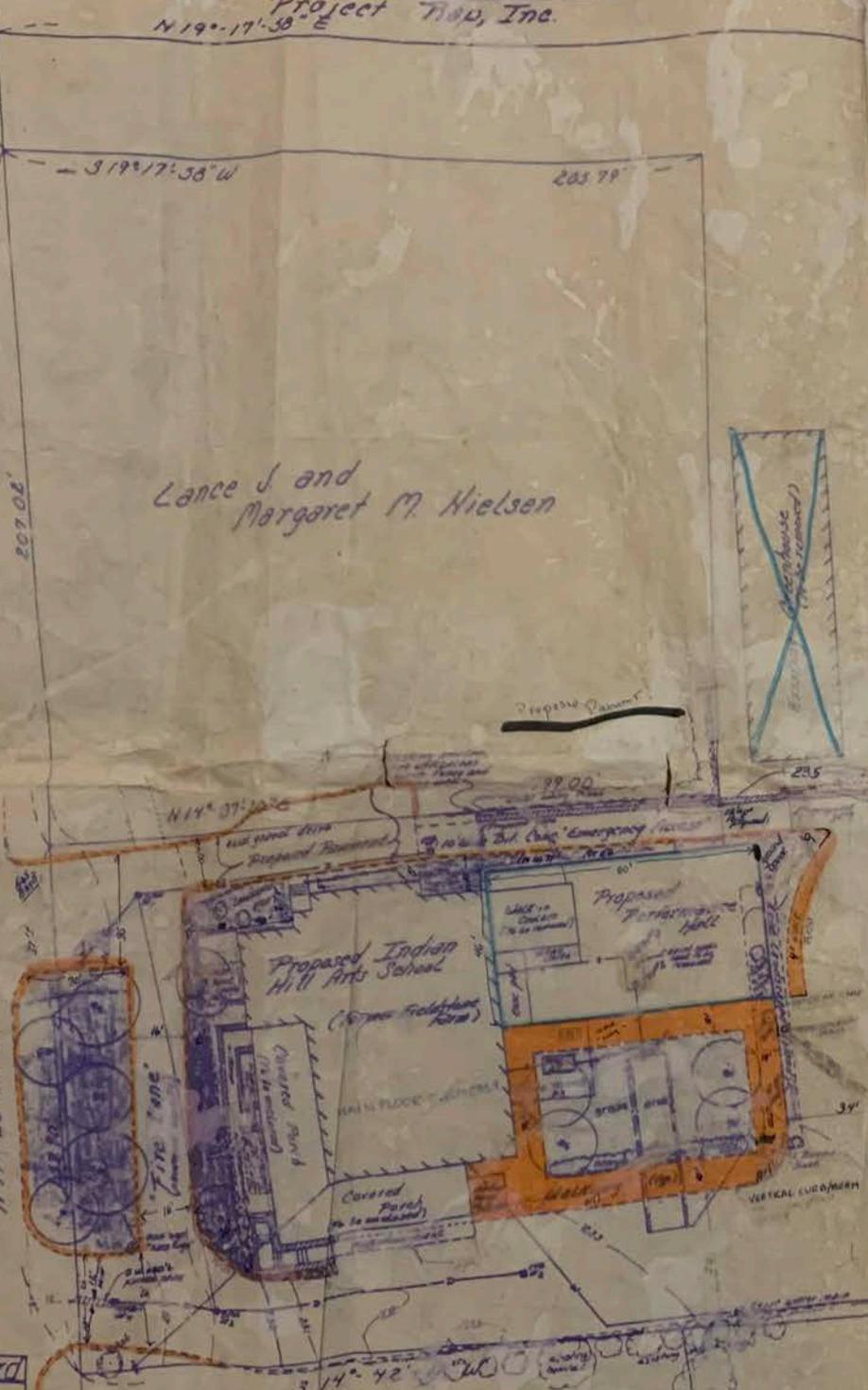
SITE PLAN OF LAND  
Littleton, Miss  
 PREPARED FOR  
Indian Hill Arts  
 SCALE AS SHOWN  
 David E. Ross  
 CIVIL ENGINEER  
 LAND SURVEYOR  
 ENVIRONMENTAL CONSULTANT  
 P.O. BOX 381, ITWAVE, MISSISSIPPI 39209  
 JOB NO. 2468

Project Map, Inc.  
N 19° 17' 38" E

King Street (Route 2-A)  
400.00'  
207.02'

Lance J. and Margaret M. Nielsen

King Street  
N 74° 25' 07" W



Town Planning Board	
APPROVED	August 12, 1963
ENDORSEMENT	August 12, 1963
DATE	1963
BY	
FOR	

Francis W. and Carol A. Gravelle  
Peter

Town of

Project Map, Inc. 4/13/65

Lot 4  
140,750 Sq Ft



Zoning Requirements

Zoning District: Residential  
Overlay: Plumber District

Proposed Use: Institutional  
Building Coverage

Existing = 8%  
Proposed = 1%

Impermeous Area

Max by Zoning = 40%  
Max without Paver = 25%  
Existing = 29%  
Proposed = 36%

Parking

Required by Zoning, floor = 120 spaces  
Required w/ permission Planning Board  
Faculty + Staff = 23 persons  
Waiting parent = 12 persons  
Total = 35 persons/spaces  
Performance Hall = 31 'x'  
Total provided = 55 parking spaces  
9 spaces reserved  
64 spaces

Lighting

Existing pole lights shall be relocated  
as shown on plan in conformance with  
Article 2, Section 173-98 of the Littleton  
Zoning Code

Signs

All signs shall conform with Article III  
Sections 173-99-12 of the Littleton  
Zoning Code

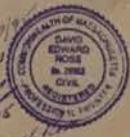
LEGEND

- Proposed contour
- Existing contour
- Edge of pavement
- Landscaped area
- Catchbasin
- Drain Manhole
- Sewer Manhole
- Light Pole
- Retaining wall
- Overhead wires
- Proposed Shade tree
- Proposed Planting tree

Note: Existing trees and shrubs to be  
transplanted to adjacent landscaped  
areas.  
This plan shall only be for features which  
were existing as of the date of the  
survey by David E. Ross Associates, Inc. 1/15/65.  
The landscape plan under this plan and 100-1  
taken from 100-1 is built by David E. Ross  
& Engineering, Inc. dated 1/15/65.

Revisions

3-1-65 Alteration parking layout to  
conform with plan



Littleton School Department

OWNER  
Somerset Savings Bank  
212 Elm Street  
Somerville, Mass. 02114  
Littleton School Dept  
Indian Hill Arts  
P.O. Box 488  
Littleton, Mass. 02460

SITE PLAN OF LAND  
Littleton, Mass.  
PREPARED FOR  
Indian Hill Arts  
SCALE 1" = 20'  
DAVID E. ROSS ASSOCIATES, INC.  
CIVIL ENGINEERS  
LAND SURVEYORS  
ENVIRONMENTAL CONSULTANTS  
PO BOX 381-17W BELMONT ST. 2-15 WILMINGTON  
JOB NO 7408 TEL NO 224-1700

REVISIONS: ASSESS APPROVAL  
WITH LAYOUT DATA ADDED  
WITH LANDSCAPE DATA ADDED  
1/15/65



ARCHITECTS  
Lerner Ladds Bartels

Design. Live. Thrive.